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THE TREATMENT OF UNILATERAL HARELIP WITH SPECIAL REFERENCE TO THE ASSOCIATED DEFORMITY OF THE NOSE.

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The principal difficulty of operations for harelip lies in the correction of the associated deformity of the nose. By any one of a number of well-known methods of operation, a successful repair of the lip may be made, provided there is a careful observance of established principles, but the restoration of the nose is often difficult and frequently not attempted by surgeons who perform operations for harelip.

The correction of an unsightly cleft of the lip certainly gives considerable improvement, but the persistence of the nasal deformity greatly mars the cosmetic result. This phase of harelip surgery is fortunately receiving more attention in the recent literture.

The best results in operations for harelip are gotten when operation is done early. The arguments for early operation have been repeatedly emphasized, but one of the most important results of early operation is the effect of the closed lip and alveolar cleft upon the development of the external nose.

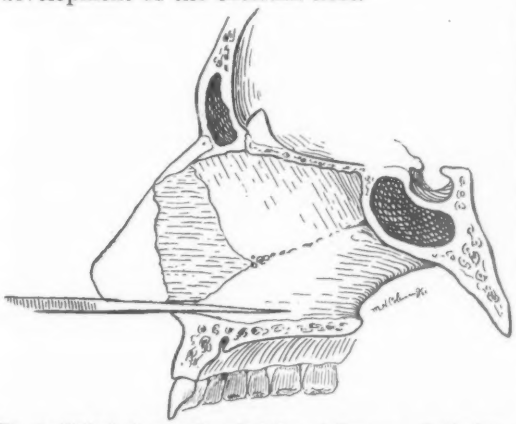

Fig. 1—Method of correcting deviation of the nose. Sectioning of the vomer with the chisel, as described in case 3-b.

In a fairly large series of harelip and cleft palate cases operated upon during the last ten years, the majority of the patients had the lip repaired during the first year, but operation has frequently been done in the first few days after birth. If the child is free from associated serious defects and is otherwise healthy,

Fig. 2—The septum is rotated to the side of the alveolar cleft so that the external nose is brought to the midline. A wire passing through the upper part of the nasal spine is attached to the first bicuspid tooth so as to maintain a midline position of the septum.

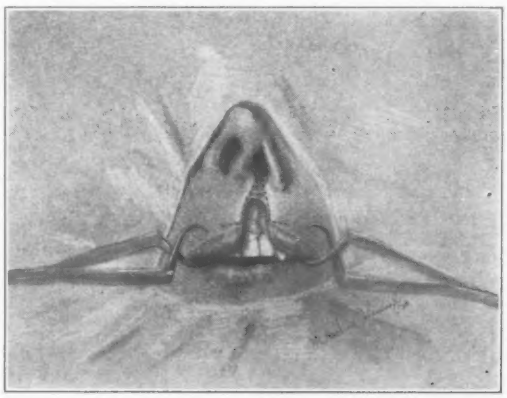

Fig. 3—Incomplete harelip. Small towel clips are used to steady the lip while the incision is being outlined. Removal of the thin tissue above the cleft is usually necessary, as indicated in the drawing. The incision is practically the same as that used in the repair of complete unilateral lip cleft. The transverse incisions indicated by the dotted line just above the vermilion border end at points at either side of the cleft, previously determined by measurement with calipers to insure a uniform length of the lip.

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the lip should be repaired within the first week or as soon thereafter as possible.

There is a high mortality in babies with clefts of the lip and palate in the first few weeks of life. Davis[1], in a most instructive analysis of twenty-four cases delivered in two Baltimore hospitals, found the mortality to be nearly fifty per cent. A congenital lip cleft is obviously a small factor in this mortality in the first weeks of life, and repair of the lip would be a futile procedure in newborn infants with other serious congenital defects or disease. As the child grows older the lip cleft may interfere with adequate feeding and operation should then be done to improve the general condition. The general care of harelip babies suffering with malnutrition constitutes a considerable problem which is best handled by a competent pediatrist.

We have followed the usual rule of operating on the lip before the palate is repaired. Exceptions probably should have been made in some cases who showed complete indifference to the concealed palate defect after the

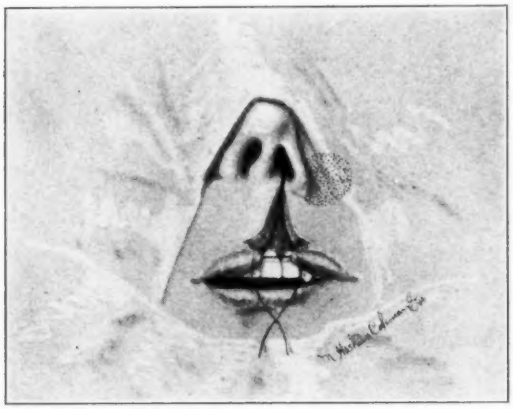


Fig. 4—The short curved dotted line on the left side of the lip indicates the excision of the triangular area of skin. This has been done on the right side of the lip. The object of the excision of this small bit of skin is to prevent a white line beneath the vermilion of the newly constructed lip and to permit a full-thickness lip in the line of suture. The stippled area indicates the undercutting of the lip which is necessary in some cases to relax tension and to freely mobilize the alae. The extent of the undercutting varies and is usually greater than is shown in the drawing.

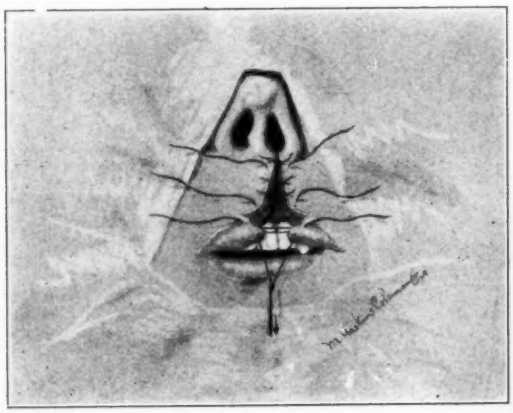


Fig. 5—A traction suture is passed through the tip of the small flaps which were made on either side of the cleft, as outlined in Fig. 3. The intermuscular sutures of fine catgut are shown with the ends crossed ready for tying. The horsehair skin sutures are passed down to but not through the mucous membrane. The lower suture is passed directly through the vermilion border to insure accurate approximation of the border.

1. Davis, John Staige, Annals of Surgery, Vol. 80, 1924.

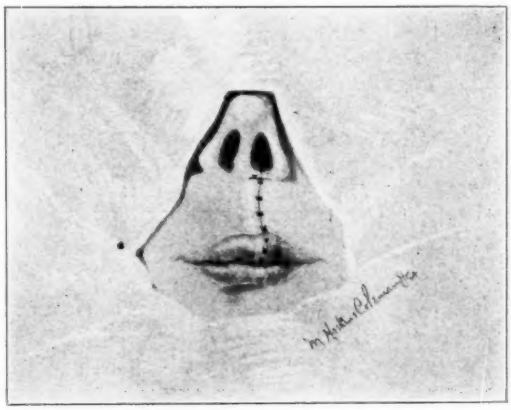


Fig. 6—A deep suture of fine silkworm gut is used at the base of the nostril to prevent spreading. The suture of the lip has been completed by fine horsehair across the mucous border and on to the mucous membrane within the mouth. Note the fullness of the lip along the suture line. There should be a protrusion of the lip at this point at the time of operation to prevent a nick later on after healing is completed. The amount of protrusion when the operation is finished should not exceed that which will disappear from the contraction incident to healing.

Case 1-a—The result of a poor harelip operation. There is practically no deviation of the nose but a flaring out of the right nostril. The patient had a wide, complete cleft of the palate. Primary operation in another clinic.

Case 1-b—Appearance of the patient after repair of the lip and complete closure of the palate accomplished at one operation.

Case 2-a—The result of an unsuccessful repair of a unilateral harelip done in childhood. There is a marked defect of the lip border, thinning of the lip up into the floor of the nostril and a deviation of the nasal septum to the opposite side. The patient did not have a cleft palate. Primary operation in another clinic.

Case 2-b—Appearance of patient after repair of the lip under local anesthesia, which is always used for adults when the lip alone is to be operated upon. The infraorbital branch of the left fifth nerve is blocked with two per cent novocain and adrenalin at the infraorbital foramen. This generally gives a complete anesthesia to half of the lip, although occasionally a few drops of the solution have to be injected at the base of the septum. The patient was undergoing treatment for a compound fracture of the left femur at the time of the lip operation. The nick in the lip border was removed and the mucocutaneous junction continued across the lip in one unbroken line. Operation by Dr. E. J. Morrissey.

Case 3-a—Incomplete unilateral harelip without cleft palate. Patient operated upon in early childhood in another clinic for repair of the lip. The photograph shows marked deviation of the nose to the right, a flattening of the left nostril and a defect of the lip persisting after primary operation. The case illustrates a marked nasal defect without an alveolar cleft. The correction of the defect of the external nose could be corrected only by operation upon the nose itself. The defect of the nose was more exaggerated in this patient than in the majority of cases which have cleft palate and an alveolar defect.

Case 3-b—The patient after complete excision of the lip scar and readjustment of the borders. The nose was brought back into a midline position by a modified Senseny operation (Fig. 1) combined with a mobilization of the nasal bones. These were fractured before they could be displaced to the left. The operation upon the nose was by far the most important and difficult part of the correction; the operation upon the lip being relatively simple. (Figs. 1 and 2) the method of correcting a deviation of the nose in unilateral harelip. An incision is made through the mucous membrane at the junction of the lip with the alveolar process and the nasal spine exposed. The mucous membrane is separated from the septum on either side and along the floor of the nasal chambers, very much as in the beginning of a transsphenoidal pituitary approach. A section of the septum is then made with a narrow chisel just above and parallel to the palate, for a distance of about one and one-half inches. The upper part of the septum is then rotated to the side of the lip-cleft and held in position with fine silver wire, (Fig. 2). It has not been found necessary to make the vertical cut in the septum, recommended by Blair. This operation is not necessary in young children but is essential for the correction of a nasal defect in many of the older patients.

obvious deformity of the lip had been corrected. If careful attention is given to the control of bleeding, operation for closure of the lip defect should be practically free from mortality. In our series there was one death three weeks after operation from a continuing malnutrition. The lip had firmly healed. In the same period there have been five deaths in young infants without operation. Some of

Case 4-a—Left unilateral harelip with cleft palate. There is exaggerated rotation of the right side of the alveolar arch with a defect in the arch. The upper part of the lingual surface of the arch is in contact with the opposite segment, so that there could be no correction of the nasal defect by the usual method of mobilizing the longer segment of the arch. The nasal deviation in this case is unusually exaggerated. The midline is indicated by marks in the center of the glabella and chin. The line connecting these points passes through the left ala instead of through the center of the tip of the nose. The repair of the lip without correction of the defect of the nose in such a case gives very imperfect results. The nose was brought to the midline, an operation similar to the one done in Case 3, and the lip repaired by the usual technique.

Case 4-b—Photograph of the patient after complete repair of the lip and palate and correction of the nasal deformity. Note the midline position of the nose and the normal appearance of the left nostril.

Case 4-c—A plaster model of the palate in Case 4. Note the contact of the two segments of the arch and therefore the impossibility of restoring the nose to normal position by fracturing the right segment of the arch and wiring it to the opposite side as is usually sufficient in patients who have alveolar cleft with deviation of the nose to the opposite side.

Case 5-a—A facial deformity with the following features: (a) unilateral harelip (right); (b) macrostomia (right); (c) absence of right auricle; (d) absence of right side of mandible; (e) defect of the right external canthus; (f) cleft palate; (g) hemiatrophy of the right side of face. All of these defects with the exception of that of the mandible are shown in the accompanying photographs.

Case 5-b—Note the appearance of the intermaxillary cleft and the remnants of the external ear with the skin pits often found in these conditions. Most of the cartilage of the deformed ear was buried beneath the skin and two of the pits led to the remnants of the buried ear. The external auditory meatus was developed and hearing on this side was good.

Case 5-c—The full-face appearance of the patient. Note the hemiatrophy of the right side. The position of the external nose is good.

Case 5-d—The appearance of the patient after repair of the lip, intermaxillary cleft and complete repair of the palate. Correction of the defect of the external canthus and ear was not done. Photograph shows lip ten days after operation. The appearance of the right ala is not satisfactory. The intermaxillary cleft was repaired by incisions very similar to those used for the repair of the lip.

the cases who died without operation had serious developmental defects, while in others a satisfactory cause of death was not found.

At the operation for repair of the lip, the alveolar cleft should be closed and wired, unless operation is done within the first month, or the cleft is very narrow. In these cases the tension of the united lip will approximate the alveolar segments. To restore the alignment and union of the alveolus in older children, it is generally necessary to produce a greenstick fracture of the longer segment and wire it in position. The lip is then repaired. We have found that there is usually some flattening of the upper lip just over the end of the shorter segment, even after wiring the alveolus. This flattening is a factor in the nasal deformity and we have found no entirely satisfactory method of overcoming it. In some cases with cleft palate and unilateral harelip the larger segment of the alveolar arch is rotated so that the incisor teeth project almost horizontally and, because of this rotation, the upper part of the alveolus is in contact with the opposite segment (Case 4). This type of deformity causes marked deviation of the nose and is not corrected by operation upon the alveolus itself.

Case 5-e—Plaster model of cleft of palate in Case 5.

Case 6-a—Adult female with left hare-lip and practically no defect of the nostril. There was no cleft of the palate or alveolar arch.

Case 6-b—Appearance of the patient eight days after repair of the lip.

The same type of operation is generally required for incomplete lip clefts as for the com-

plete. From the standpoint of development of the labial muscles, all are complete and the incision must generally remove the attenuated tissue above the cleft until the nostril is opened, if the nasal deformity of the affected side is to be adequately corrected and a full-thickness lip made.

Thompson's plan of placing the incisions by measurement introduces a more precise method of giving uniform length to the lip, and we have found it of the greatest assistance.

The importance of excising enough tissue from the edges of the cleft to give a broad approximation is a detail of technique often emphasized but frequently disregarded. We have considered the floor of the nostril and the vermilion border of the lip the points where absolute accuracy of adjustment and suturing is necessary. Formerly we did not suture the muscles separately, but in later cases this has generally been done with improvement in the results. Boric acid powder is used on the lip after operation but it is not entirely satisfactory because of crust formation. These crusts should be removed on the fourth or fifth day by gently applying saline solution. At this time the removal of the stitches should be begun. If there is much secretion from the suture line at this time, we have found the application of mercurochrome solution very helpful. Fine catgut for the muscle and horsehair for the skin and mucous membrane have given the best results in our cases.

Complete failure of union of a sutured lip

Case 7-a—Boy sixteen years of age with wide cleft of the lip, alveolar process and palate. There is marked deviation of the nose to the right. The position of the tongue is shown between the alveolar clefts.

Case 7-b—Photograph of cleft of alveolar arch and palate.

Case 7-c—Photograph after repair of the lip and correction of the defect of the external nose. Fracturing the right side of the arch and wiring it to the left segment was sufficient to return the nose to the midline position. The patient refused operation for repair of the palate, which would have been relatively simple because of the high palate arch and the moderate width of the cleft. Note the alignment of the lip with a small mucous membrane defect of the lip border. It was proposed to correct this at the time of operation upon the palate.

Case 8-a—Complete cleft of the palate with a notch in the lip, following operation some years ago, in another clinic. The palate was repaired with complete success and the defect of the lip overcome at the same time. To correct the defect of the nose it was necessary to excise the scar of the previous operation.

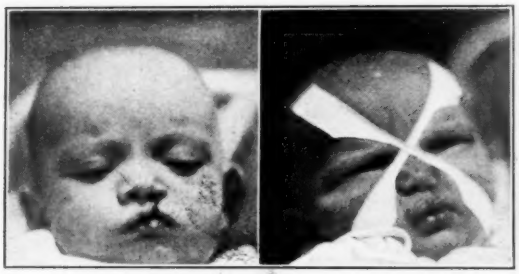
Case 8-b—Photograph of patient after healing of the lip and palate.

Case 9-a—Right unilateral harelip and cleft palate. The segments of the alveolar process shown almost in contact because of a pointed extremity of the right segment. This extremity was excised and the alveolar process wired by green-stick fracturing of the left side posterior to the canine. At a subsequent operation the lip was repaired by the usual technique.

Case 9-b—Patient after repair of the lip. Operation by Dr. J. G. Lyerly.

is very rare. There was one instance in our series after repair of a double harelip. The child had nasal diphtheria which, if it existed, was overlooked before operation. There was no discharge from the nose until the seventh day. Careful inspection of the nose with culture of any discharge should be a routine.

The problem of anesthetic which was formerly of so much concern in small infants has largely disappeared with the services of a trained anesthetist who takes charge of the anesthetic in all operations about the head and face. Inhalation of small quantities of chloroform from a sponge at a distance for very young infants, ether for older children and infraorbital blocking for adults have given entire satisfaction.



Case 10-a—Unilateral harelip with complete cleft palate in a baby three months of age. There is a moderate defect of the left ala.
Case 10-b—Appearance of the lip five days after operation. Note the crowding in of the left nostril which usually spreads about the eighth or ninth day. The late results were excellent. The palate was repaired when the child was nine months of age. The adhesive strips used to relax the tension on the upper lip are shown.

Case 13-a—Left incomplete unilateral harelip and cleft palate. The lip was repaired when the child was three months of age.
Case 13-b—Photograph of patient at seven months of age. The palate was repaired one month after the lip operation.

Case 11-a—Incomplete harelip of the right side with cleft palate. Considerable nasal defect.
Case 11-b—Photograph of the child three years later. Lip clefts of the left side are about four times as frequent as those of the right.

Case 14-a—Unilateral harelip with complete cleft of the alveolar arch and palate. Operation on the alveolar arch and lip at two and one-half weeks of age.
Case 14-b—Photograph at ten months of age, after repair of the lip. Appearance of the lip is good and the nasal defect has been corrected.

Case 12-a—Complete harelip of the left side without cleft of the alveolar arch or palate.
Case 12-b—Photograph five days after operation. Sutures have been removed. The operation was done under local anesthesia by blocking the left infraorbital nerve.

Case 15-a—Complete unilateral harelip with cleft of the arch and palate. Marked deviation of the nose to the right, with the usual amount of flattening of the left nostril.
Case 15-b—Photograph three months later shows the results of operation upon the lip and closure of the alveolar defect. The palate has not been repaired.

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The technique of operation and the results in a group of patients representative of the various types of deformity are illustrated by

Case 16-a—Incomplete harelip with no cleft of the palate or alveolar arch.
Case 16-b—Results six days after operation.

the accompanying drawings and untouched photographs. Some of these patients and many others of the whole series will require later

Case 17—Child four days old. There was no cleft of the palate and a very slight defect of the lip. The defect of the left nostril, however, is very evident. The child died two days after admission to the hospital without operation. Autopsy was refused.

operations for cleft palate. Operative procedures for bilateral harelip and cleft palate will be discussed in a later paper.

Case 18-a—Boy three years of age with left harelip. There was no cleft of the palate. Lip clefts are found in the negro almost as frequently as in the white, but there were only two cases of cleft palate in the series.
Case 18-b—Result of repair of the lip eight days after operation.

503 Professional Building.

TREATMENT OF ADENOMATA OF THE THYROID.*

By EDMUND HORGAN, M. D., F. A. C. S.
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A thorough clinical and laboratory study should be made of each case of goiter under observation to establish the variety before treatment is instituted as the etiology, pathology and treatment of each variety of goiter is different. The treatment of each, as the etiology and pathology, should be discussed separately. The discussion in this paper will be confined to the treatment of adenoma of the thyroid.

Adenomatous goiter is found mostly in areas which are known as "goitrous districts," but many cases are encountered elsewhere. It is a condition that confronts the surgeon in every clinic. An adenoma of the thyroid can not be diagnosed clinically until it is large enough to be palpated, or until it causes a noticeable enlargement of the neck. Many small adenomata, which are too small to be palpated during life, are found at autopsy. Observation by the patient or clinician is usually first made during puberty or early adult life when the adenomata ordinarily enlarge sufficiently to be noticed. Adenoma of the thyroid may be single or multiple, unilateral or bilateral, and may vary in size up to 15 cm. in diameter, or larger. The adenomata may cause enlargement of the neck anteriorly or laterally, on

Fig. 1.—Adenoma in right lobe of the thyroid showing recent hemorrhage which had caused sudden enlargement. Right lobe removed at operation.

one or both sides; or they may be substernal, interthoracic, or retrotracheal. They usually enlarge sufficiently to be noticed during pregnancy or early adult life. Growth of an ade-

*Presented before the Medical Society of Virginia, October 16-19, 1923, at Roanoke, Virginia.

noma may be slow or rapid and after attaining a certain size may remain unchanged for years. Enlargement, which may or may not subside thereafter, may be noticed during menstruation or pregnancy. A sudden enlargement of an adenoma may occur at any time. This sudden enlargement is usually due to hemorrhage within the adenoma. Rapid enlargement may be due to malignancy.

The onset of toxic symptoms due to adenomata of the thyroid is so insidious that they may be present for a number of years before being detected. After from five to twenty years' duration, symptoms of hyperthyroidism can usually be detected. There is great variation in the severity of the hyperthyroidism and the amount of tissue damage. Arterial hypertension, myocarditis, tachycardia, dyspnoea, and edema are encountered in varying degrees of severity in the most toxic cases. Pressure symptoms from sudden or progressive enlargement, causing dysphagia, difficult breathing, choking, and hoarseness, may develop at any time. The rate of basal metabolism is not high as a rule, usually being about plus thirty per cent. Occasionally the acinic cells in an adenoma with well developed acini, in an otherwise normal gland, may hypertrophy and by their cellular activity produce all the symptoms of exophthalmic goiter. In such a case the basal metabolic rate may be high. Exophthalmic goiter, with the characteristic changes in the parenchyma of the thyroid, may occur in an individual having an adenoma.

Surgery

Every case of adenoma of the thyroid is potentially a surgical case, but should be primarily a medical one. In young adults, operation should be deferred unless the adenomata are causing pressure symptoms by their retrotracheal, substernal, or interthoracic position, or for cosmetic reasons. After the third decade of life, the patient should be advised to have the adenomata removed surgically to prevent tissue damage by a slowly progressive hyperthyroidism which is characteristic of

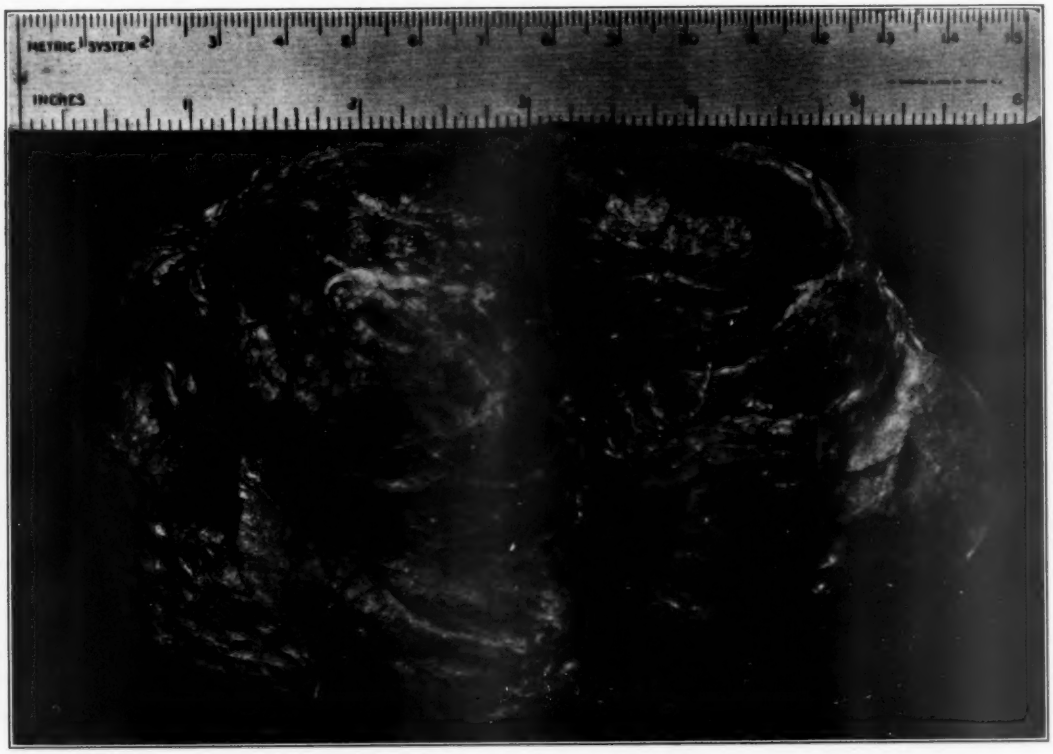

Fig. 2.—(Case No. 298). Photograph of resected portions of right and left lobes and isthmus of the thyroid removed at operation for multiple adenomata.

this variety of goiter and which will eventually occur. The arterial hypertension, myocarditis, tachycardia, dyspnoea, and edema, which is encountered in the most toxic cases, should be treated medically until the patient improves sufficiently to be considered a good surgical risk. An X-ray study should be made to determine if the goiter is substernal or interthoracic. The curative treatment of adenoma of the thyroid is the surgical removal. No other treatment has proven effective. Ligation of the superior thyroid arteries is not practiced in adenoma of the thyroid.

The patient is prepared for operation as follows: Light supper in the evening previous to operation; no laxative; soap suds enema morning of operation; no fluids by mouth for four hours preceding operation; morphine, grs. 1/6, hypodermatically two hours before operation; and morphine, grs. 1/6, and atropine, grs. 1/150, hypodermatically thirty minutes before operation.

The patient is placed on the operating table with the shoulders slightly elevated on a cushion and the head extended. The table is changed from a horizontal position to an incline of about fifteen degrees with the head of the table highest. The skin over the operative field is prepared and draped.

Anaesthetic.—The operation may be done under a local or a general anaesthetic, or a combined anaesthesia of nitrous oxide and oxygen with local infiltration of the tissues with novocaine. The combined anaesthesia is to be preferred and has proven to be the most satisfactory. Much depends upon the co-operation of the patient. When the patient is placed in position the inhalation anaesthetic is begun, and just as soon as the operative field is prepared the local infiltration is made. The first injection of novocaine into the tissues is along the posterior border of the sternomastoid muscle on a line with the hyoid bone. An infiltration in this area, done on each side, will anaes-

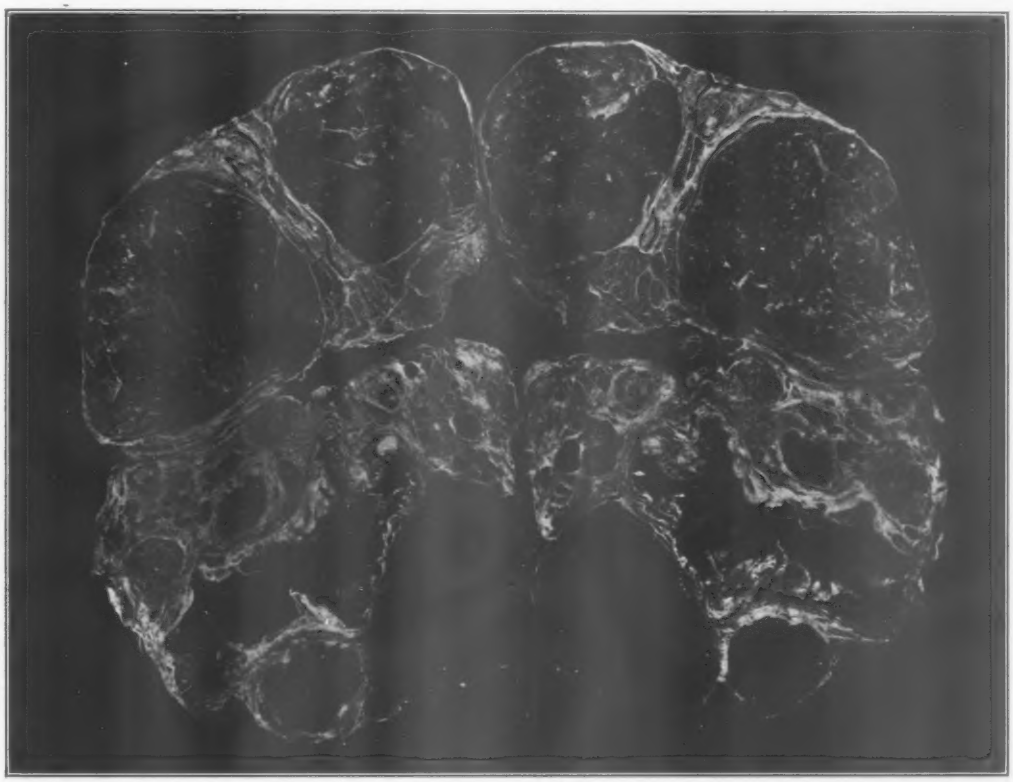

Fig. 3.—(Case No. 298). Photograph of sectional surfaces through right and left lobes and isthmus of the thyroid, showing multiple adenomata with marked fibrosis throughout the gland. The adenomata show hemorrhagic, hyaline, fibrous, and calcareous degeneration.

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thetize all the superficial branches of the cervical plexus supplying the operative field. About 15 c.c. of novocaine is injected into each area. In addition, the subcutaneous tissues on the anterior surface of the neck, over the thyroid, are well infiltrated. When the gland has been resected, the resected lobes sutured, and the blood vessels ligated, the inhalation anaesthetic is stopped. The anaesthesia produced by the novocaine will allow suturing of the muscles and closure of the flaps while the patient is regaining consciousness. By this method the patient is carried through the operation without the pain experienced by the pulling and dragging on the tissues in an operation done under local anaesthesia alone, and is saved the long inhalation required by an operation done under general anaesthesia.

Incision.—A low elliptical incision is made across the anterior surface of the neck, care being taken not to make it too low. The incision is made through the skin, subcutaneous fatty connective tissue, and platysma muscles with one sweep of the knife.

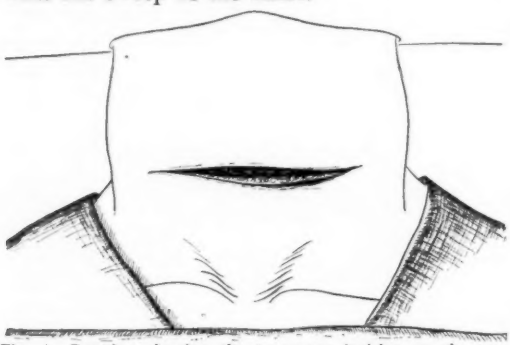

Fig. 4.—Drawing showing the transverse incision on the anterior surface of the neck. With the head fully extended the incision should be made transversely about one inch and one-half above the sternal notch. This incision will leave an elliptical scar that will lie just above the sternal notch when the head is in the normal position.

Flaps.—Two flaps are raised, a superior and an inferior. The superior flap is dissected free up to the thyroid cartilage, the inferior flap down to the sternal notch.

Muscles.—A midline separation of the bellies of the sternohyoid and sternothyroid muscles is made, and, with blunt retractors, the muscles pulled laterally. Division between forceps of one or both sternohyoid muscles will facilitate exploration, delivery of the gland, suturing of the resected lobe or lobes, and tying off the clamped blood vessels.

Exploration.—Exploration of both lobes with the index finger should be made before enucleation of an adenoma or resection of the gland is begun, in order to determine if possible if there are adenomata which could not be palpated during the physical examination, and also to determine if the adenomata are substernal, retrotracheal or interthoracic.

Resection.—The operation should be an enucleation for a single adenoma, and resection of one or both lobes if the adenomata are multiple. It is frequently difficult to remove substernal or interthoracic adenomata until the lobe to which they are attached has been resected. The recurrent laryngeal nerves and the parathyroids can be avoided by remaining above the second division of the inferior thyroid artery.

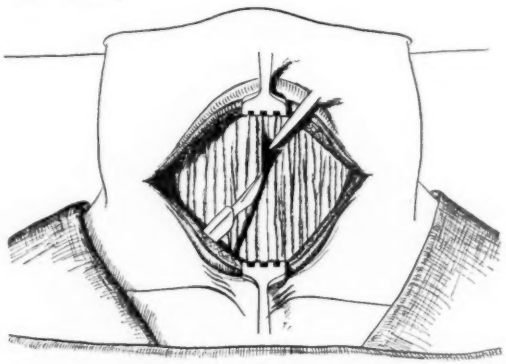

Fig. 5.—Drawing showing the superior and inferior flaps, retracted to expose the sterno-hyoid muscles. The fascia in the midline between the two muscles is cut and the muscles are either retracted or divided to expose and deliver the thyroid gland.

Suture.—The bleeding and oozing from a resected lobe can be controlled by a continuous mattress or locking suture over the raw surface of the lobe. When all of a lobe, except the posterior capsule, has been removed, the clamped vessels are best tied, as sutures may include the recurrent laryngeal nerve and interfere or cut off the blood supply to the parathyroids. Branches of the superior and inferior thyroid arteries and the superior, middle and inferior thyroid veins should be securely tied.

Drainage.—A small amount of oozing will occur from the sutured surface of the gland and to prevent the formation of a hematoma a small soft rubber tube or rubber tissue left in place for 48 to 72 hours will drain off the blood and serum. The formation of a hematoma with the resulting extravasation into the tissues may produce edema of the trachea and larynx. If the oozing is profuse a small gauze

pack may be used and the end allowed to pass through the opening with the drainage tube.

Closure.—The sternohyoid muscles, if divided, should be closed by a continuous locking suture to prevent bleeding from the divided vessels. A few interrupted sutures placed in the midline will hold the muscles in place. The flaps are closed by a continuous suture drawing the platysma together and a continuous subcuticular silkworm suture.

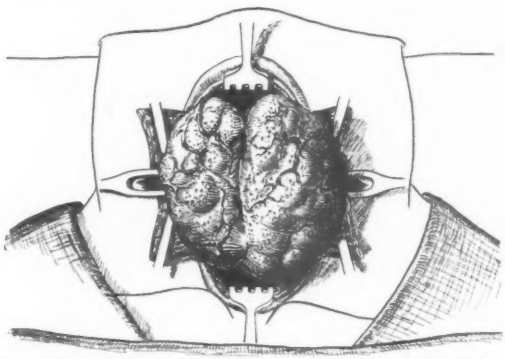

Fig. 6.—Drawing showing transverse division of right and left sterno-hyoid muscles, separation and retraction of sterno-thyroid muscles, and delivery of thyroid gland for inspection and palpation.

Delayed Closure.—If the condition of the patient is such that the operation must be done with great speed for the safety of the patient, or if the condition of the patient becomes alarming during the operation, closure of the wound may be postponed for 24 to 48 hours. The wound is packed loosely with gauze and the gauze allowed to remain until the delayed primary suturing, under nitrous oxide and oxygen anaesthesia, is done in the patient's room.

Tracheotomy.—A trachea, in which the tracheal rings have been softened by pressure, may collapse at any time during the operation, especially while traction is being made to deliver the gland, and if the cyanosis is not removed when the traction is released a tracheotomy should be made immediately. A soft catheter may be passed into the wound made in the trachea and allowed to remain during the operation. When the closure of the wound is begun a tracheotomy tube may be inserted and the wound closed around the tube. This procedure may prevent a death upon the table and save the patient, if promptly executed when necessary.

The greatest co-operation between the surgeon, anaesthetist, assistants and nurses is necessary for the safety of the patient. The highest degree of skill and efficiency is essential.

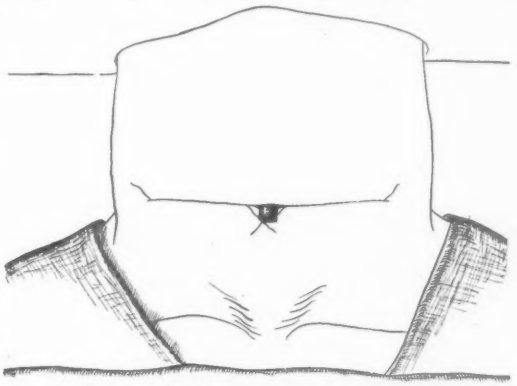

Fig. 7.—Drawing showing the sutured wound opening in center through which rubber tube drain passes. After the lobes of the gland have been resected and sutured, the transverse incisions in the sterno-hyoid muscles are sutured, and the fascia of those two muscles is sutured in the midline over the trachea. The inferior and superior flaps are united by suturing the platysma muscles together with a continuous catgut suture, and the skin with two subcuticular silk-worm sutures.

Summary

1. All patients having goiter should be under observation of the internist to determine the variety before treatment is instituted as all diseases of the thyroid are primarily medical.
2. Adenoma of the thyroid is best treated by surgical removal after adolescence, or during adolescence, if pressure symptoms develop.
3. A combined anaesthesia of nitrous oxide and oxygen with a local infiltration of the tissues with novocaine has proven to be the safest and most satisfactory method.
4. Efficient co-operation of the surgeon, anaesthetist, assistants, and nurses is most essential.

Stoneleigh Court.

OSTEOMA OF THE FRONTAL SINUS WITH REPORT OF A CASE.*

By F. H. LEE, M. D., Richmond, Va.

These rare, slow-growing tumors, at one time called "petrified brains," and to the old physicians a source of much mystery, are of historic interest. They not infrequently produced hideous deformity and death, and because of the unfavorable results of operative interference, provoked a dismal prognosis. The supposed futility of radical surgery is evi-

*Read before the Eye, Ear, Nose and Throat Society of Richmond, June 18, 1924.

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denced by Berlin's advice to remove only the eye in cases of frontal sinus osteoma with rupture into the orbit. Sir John Bland-Sutton cites an interesting case in which a swelling the size of a pea was noticed at birth. At the age of nine it had destroyed the eye. At the age of twenty-five the skin of the brow sloughed; and eight years later the tumor fell out of the orbit. In 1881, Herman Knapp reported eleven cases of osteoma of the frontal sinus, of which his own was the first recorded in this country. In 1907, Gerber reported eighty-seven true cases of frontal sinus osteoma, and E. C. Sewall, in 1918, added cases from the literature with the report of his own, bringing the number to ninety-three. Since Sewall's report I have counted six cases in the literature, as follows: Reeve, one; Barnhill, one; Boardman, two; Thomas, one; and Reh, one. This brings the number of cases, including the one here reported, to 100. It is interesting to note here, that Culbert, in 1918, gave a rough total of 215 as representing the number of all cases of osteoma of the nasal accessory sinuses in the medical literature since 1748, and that the frontal sinus holds a large share of this number, nearly one-half. Kikuzi, analyzing fifty-four cases, found twenty-six frontal, eleven ethmoidal, eleven antral, five sphenoidal, and two nasal. On the other hand, Gerber gives the percentage of those arising in the ethmoid as twelve to eight to those arising in the frontal sinus. An idea of the infrequency of occurrence may be gotten from Andrew's report of eight cases of bony growths of the orbit out of nearly 430,000 cases of eye diseases. As to age, about fifty per cent occur during adolescence and eighty per cent occur under the age of fifty.

Histopathic origin: Various theories have been advanced as to the origin of osteoma. The question does not seem to be definitely settled. According to Ewing, histologic study fails as a rule to distinguish between simple hyperplastic growths and true osteomas; and that the gross and clinical features seem to offer the best criteria by which to separate them; also that limitation of growth is characteristic of the inflammatory type, but that true osteomas progress steadily until extirpated. Though the growth of an osteoma is usually over a period of ten years or more, before causing annoying symptoms, there may be comparatively rapid growth, as in the case reported by Thomas, in which one year after extirpation the tumor had grown to twice the size it was before operation. Osteomas may be composed of either the compact or cancellous type of bone. The former is the usual type seen in the frontal sinus and in consistence may be like ivory.

Etiology: Though the writers are not en-

Fig. 1—Drawing of the patient before operation; showing the tumor in the inner canthus of the right eye and the marked ocular displacement.

Fig. 2—Photograph taken 8 weeks after operation; showing that the eye has returned to practically its normal position. The pronounced details, from an unusually good focus of the camera, exaggerate the deformity of the brow and show an apparent ectropion of the lower lid which does not exist.

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tirely in accord as to the etiology, most of them can find expression of their views in Culbert's summary, which in substance is: In osteomas of the nasal accessory sinuses there is in all probability a congenital defect which may or may not be stimulated to activity, the activating influnces being the unusual activity in the frontal region during adolescence, endogenous irritations, and external traumatism.

Symptoms: Primarily the symptoms must be classed as those due to pressure. Of the early symptoms, if there are any, headache is the most frequent. Later the symptoms will depend on the cavity encroached upon. Displacement of the globe, symptoms depending upon complicating infections, embarrassment of nasal respiration, and symptoms of intra-cranial pressure may be mentioned as likely to occur.

Diagnosis: Radiographic findings make the diagnosis self-evident. Where the tumor can be felt there is little difficulty experienced, and where there is beginning displacement of the globe or distention of the sinuses without a well founded cause, it should be suspected.

Fig. 3—Radiograph of the sinuses before operation, lateral view; showing invasion of the cranial cavity.

Prognosis: Gerber gave apt expression to the condition in saying that these tumors had the peculiarity of benignancy of histologic structure, but malignancy of effect upon surrounding structures. The following mortality statistics of Birch-Hirschfeld serve to give a good idea of what the surgeons formerly faced in encountering these cases.

Unoperated—Frontal 48.2; Ethmoid 80.0; Sphenoid 100.0;

Operated—Frontal 13.6; Ethmoid 12.7; Sphenoid 33.0.

Death was usually caused by meningitis or cerebral abscess, and even today these complications cause us most concern, so that a sinusitis complicating an osteoma would make the prognosis less favorable. Since the introduction of asepsis and the improvement of surgical technic, especially since Killian's work, the prognosis following operation is certainly favorable in the early cases, and much more so than formerly in the advanced ones. The difficulties of removal depend upon the size of the growth and the extent of its attachment.

Treatment: The treatment is early extirpation of the tumor. The technic is somewhat after the modified radical Killian operation with extension of the inner end of the skin incision upward if necessary. The compact tumors when connected by a pedicle or the attachment is not too extensive, may be removed by gradually prying and rocking the tumor free with suitable instruments. Care should be used to avoid opening the dura; and when the operation is at all extensive external drainage should be established.

References will be given to the literature reviewed, on which, this introduction is based. Sewall's and Culbert's reports are excellent and carry full bibliographies.

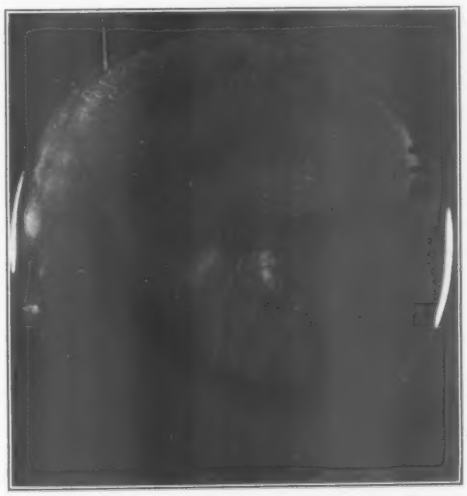

Fig. 4—Radiograph of the sinuses before operation, front view; showing the tumor nearly filling the large right frontal sinus and protruding into the orbit. A distinct tumor can be seen in the upper inner angle of the left frontal sinus.

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Report of Case

J. H., male, age 17, colored, errand boy, was first seen May 22, 1924, on Dr. Karl Blackwell's clinic at the Medical College of Virginia. He complained of a swelling at the upper part of the inner angle of the right orbit. The patient said he had no other symptoms, and that he knew the swelling was there only when he looked in the mirror. It was first noticed one year ago. The growth increased in size and then he thought it decreased some. On April 1, 1924, he bumped his forehead against the end of a wagon, cutting the skin of the brow one and one-fourth inches, temporally. The wound was treated surgically and healed without trouble; but since then the tumor has grown rapidly. When questioned about diplopia and epiphora he said he had the former occasionally and the latter when reading. I noticed he closed one eye when reading.

The family history and his past history were negative.

Inspection revealed a slightly tender tumor, about the size of a small cherry, apparently pushing through the upper, inner, and under margin of the orbit. To touch it felt as if it were a smooth, round, bony growth bearing slight resilience. There was oedema of the surrounding tissue and the lid drooped. The globe was pushed forward, outward, and well downward. The head was tilted on the horizontal and vertical axes to the right. Examination of the globe was negative, excepting a slightly dilated pupil. The vision in the right eye was 20/30, in the left eye 20/20. In the light the pupil of the right eye measured 3 mm.; the left 2 mm. The pupils reacted directly and consensually, and to accommodation; but a little slowly in the right eye. The accommodation was 8.5 diopters in the right eye. The interpupillary distance was 70 m.m.; pupil O. S. was 32 mm. from the mid-line; pupil O. D. was 38 mm. from the mid-line, and 8 mm. below the horizontal plane. The ocular movements were good in all fields, probably O. D. lagging a little in the upper cardinal directions.

Screen test, O. D. turned up and in; O. S. turned down and in.

Binocular uncovering, O. D. squinted down and out; O. S. squinted up and out.

A plot of the diplopia mapped on the tangent curtain gave in all fields a rather marked vertical separation of the images with slight horizontal separation. There were slight changes in the various fields.

Fig. 5—Radiograph of the sinuses after operation, lateral view; showing the remaining shell. The partly flexed hand will serve to explain the prominent shadow in this view.

The field of vision was practically normal. The upper nasal quadrant was encroached upon, but this was due to the swelling protruding into it.

The right side of the nose was free from obstruction and secretion, and presented a healthy mucous membrane. The throat examination was negative. The sinuses did not transilluminate. All other examinations were negative, including the blood (Wassermann reaction), urine, physical, and neurological. The radiographs confirmed the clinical diagnosis of osteoma of the right frontal sinus.

On June 2nd the patient was operated on at the Memorial Hospital. The brow was shaved and strict asepsis observed. The mass in the orbit was easily extirpated and found to be thinly encapsulated. The sinus was opened and the tumor was immediately encountered. The mucous membrane was very thick. With the rongeur the tumor was easily exposed anteriorly and was removed with the rongeur and curette. The cranial cavity was entered at the upper medial part of the sinus, the dura being exposed about ten mm. square. At this point the tumor had eroded the sinus wall. It

was in contact with the dura, and was thinly encapsulated. The floor of the sinus was removed making an opening ten mm. square into the orbit. The bony brow was so encroached upon that it was removed for a distance of

Fig. 6—Radiograph of the sinuses after operation, front view; showing small part of the tumor left in the upper median part of the right frontal sinus and the separate growth in the left frontal sinus. The anterior edge of the remaining shell can be seen, faintly, immediately to the right of the septum of the frontal sinuses.

two cm., precluding the possibility of retaining a cosmetic bridge. The tumor was curetted away to points beyond which I did not think would be reasonably safe; that is the posterior wall in the median line including the frontal crest, and the portion of the frontal just external to the cribiform plate. With this there was left the small but distinct tumor in the left frontal sinus. While removing the main mass, encapsulated lateral nodules were pried from their beds in the sinus wall leaving behind smooth pockets. The wound was closed with external drainage established. The growth was evidently of the cancellous type of bone.

The patient had an uneventful recovery from the operation. The wound healed well and all stitches were removed on the eighth day.

Dr. W. H. Cook, the pathologist, submitted the following report: "Tumor-like growth of fibroblasts which are producing large amount of collagen fibrils and frequently are being transformed into osteoblasts with formation of bony trabeculae. Mitotic figures are not observed. Pathological diagnosis; osteoma (inflammatory exostosis).

Dr. J. L. Tabb, the roentgenologist, took pictures on the 9th day and reported the following: "Majority of tumor removed. Small portion of tumor remains behind the upper portion of the right frontal sinus compartment, and apparently behind the upper portion of the left sinus close to the mid-line." If the right hand, semiflexed, is held up, it will give a good idea of the remaining shell, and how it cast the prominent shadow in the lateral view. The shadow cast in the left sinus is from a distinct tumor.

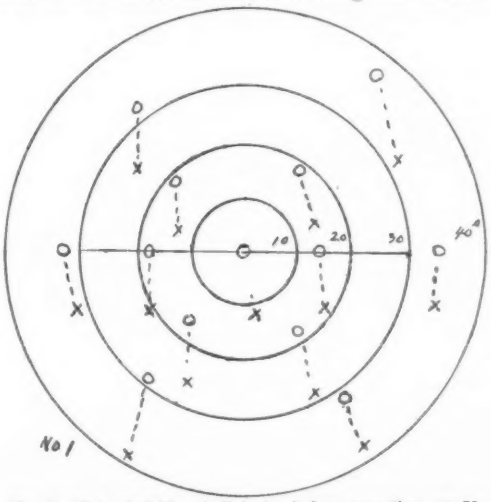

Fig. 7—Plot of fields of diplopia, before operation, at 75 cm., red glass over left eye; the right eye fixed; showing considerable separation of the images.

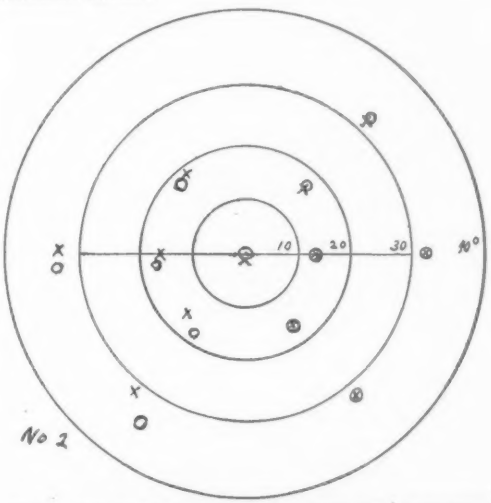

Fig. 8—Plot of fields of diplopia, 12 days after operation, at 75 cm.; red glass over left eye; right eye fixed in the fields on the right; showing the decrease in the separation of the images with fusion in two fields on the right.

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On August 2nd there was some proptosis of the right eye. The visual acuity of the right eye was 20/30 corrected to 20/20 with a plus .075 cyl. ax. 75. There was binocular single vision in the right fields. In the left fields the patient had a vertical diplopia which increased in the field of action of the right superior oblique though there seemed to be no limitation of motion. There was no annoyance from the diplopia as the patient overcame it by slightly tilting his head to the left.

Conclusion.—The operation was undertaken with the hopes of extirpating the tumor; but in that it was the cancellous type of osteoma with an extensive posterior attachment and in that it abutted or attacked a most dangerous area, the region of the cribriform plate, it was considered safer to leave a shell rather than enter the cranial cavity in this region. Later, if the symptoms justified it, or there was further invasion of the cranial cavity, complete removal of the growth would be undertaken. The growth in the left sinus which seemed to be formed around the upper part of one of the septa was to be dealt with later.

Fig. 9—Photo-micrograph of section of the osteoma; showing average microscopic appearance under the high dry lens.

Conclusion

From the negative findings of a thorough examination of the patient, and from the physical features of the tumor, especially its being encapsulated, I regard the tumor as a true osteoma with an inflammatory phase superimposed upon it by traumatism which played no part etiologically but acted only to accelerate its growth.

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SOME PRACTICAL CONSIDERATIONS OF GOITER.*

By PHILIP S. SMITH, M. D., Abingdon, Va.

Of all the so-called ductless glands our knowledge of the thyroid has been most clearly and scientifically advanced. This has resulted from the fact that not only is the thyroid gland the most accessible, but also because clinical disturbances of that gland are more frequent and more easily recognized than other endocrine disorders. While admitting our ignorance of much of the physiology and pathology of these important organs of internal secretion, there are a few certain, outstanding facts that have been carefully sifted out of the mass of chaff of unproven theories. Workers in this field have been rewarded in producing such eminently satisfactory results as the effect of pituitrin on the uterine musculature, adrenalin in relieving bronchial spasm, and the more recent epoch-making agent of Banting and Best in the treatment of diabetes.

A knowledge of the fundamental physiological activity of the thyroid is essential to an understanding of its pathologic states. Briefly stated, it occupies the keystone position in the

*Read before the Wise County Medical Society at its meeting in Norton, Va., June 25th, 1924.

arch of the endocrine system in that it largely controls the all-important function of tissue waste and repair. The rate of practically all of the body's vital processes is in its custody, augmented and assisted by other inter-related glands of internal secretion. Heat generation is indirectly one outstanding feature of its activities. To Kendall and Plummer are we indebted for much of our knowledge of how the gland thus functions. The former demonstrated that the body's intake of iodine in its food and water was utilized by the gland in the formation of its active principle, thyroxin. Plummer later showed that the quantity of thyroxin in the body tissues determined the functional demands made upon the thyroid. DuBois and others still later made possible the determination in a practical way of the relative amount of thyroxin present in the body and the functional state of the thyroid by estimations of the individual's metabolic rate under basal conditions. This metabolism test, as originally conducted, was much too complicated and technical for general practical use. With simplification of apparatus and the employment of oxygen consumption as an index of the heat generated by the body, it has been made available, not only for institutional use, but also for the general practitioner As an aid in diagnosis of "borderline" cases, and as a guide to clinical improvement in thyroid disorders, the metabolism apparatus is now regarded equally as necessary as the thermometer in treating typhoid fever, or the sphygmomanometer in certain cardio-vascular-renal conditions.

Practically all of the commoner disturbances of the thyroid gland are associated with goiter, by which is meant relative enlargement of the organ. That the subject is an appropriate one needs no proof. During the recent war the draft board found that in Virginia seven out of 1,000 young men examined had "goiter." This figure, manifestly, is much smaller than the actual incidence of goiter in the State, since it is well known that in females thyroid enlargement is about four to five times as common as in males. Then, too, in other sections of the State goiter is much less often seen than in Southwest Viriginia. A visiting physician from Richmond, attending a county fair in Abingdon, was so impressed with this fact that he occupied himself counting the goitrous fair-goers as they passed before him.

The thyroid gland, like other secretory organs, is made up of two main types of tissue, viz., the "working" portion (parenchyma), composed of cuboidal epithelial cells, and the supporting or interstitial connective tissue, in which ramify a bountiful net-work of blood-vessels and nerves. It is chiefly in the specialized epithelial cells forming the glands, or acini, that the striking changes occur in disorders of the thyroid.

The usual classification of thyroid disorders is based upon the tissue changes or microscopic pathology. One cannot wholly disregard such a pathological consideration in discussing goiter, but emphasis will be placed upon another, and probably more practical, phase of the subject which it is hoped will be of interest to you.

In this paper the following clinical types of thyroid disorders will be considered, the classification being made on the basis of the gland's function rather than the tissue changes:

1. "Endemic" goiter
   a. Non-toxic adenomata
   b. Colloid goiter
2. Sub-thyroid states
   a. Cretinism
   b. Myxedema
3. "Hyperthyroid" states
   a. Toxic adenomata
   b. Exophthalmic goiter

Acute thyroiditis and malignant tumors of the gland will not be discussed.

"Endemic" Goiter

You are familiar with the recent work done by Marine, Kimball and others in demonstrating the deficient iodine content of the food and water in the states of the Great Lakes district as the outstanding factor in the etiology of "endemic" goiter so prevalent in that region. These goiters are either the adenomatous or colloid type. In neither are there symptoms of hyperthyroidism. Both occur during the period of adolescence, particularly between seven and fourteen years; and, as would be expected, it is considerably more common in girls, than in boys. In some areas 60 to 75 per cent of the children of grammar school age have goiter. Its incidence is in inverse ratio to the iodine content of the water available for drinking purposes. These children, when divided into two large groups, one of which is given sodium iodide, and the controls not similarly treated, show that not only is adoles-

cent goiter largely preventable, but that the thyroid enlargement that has already occurred can generally be overcome. The method and dosage of administering the iodine have not yet been determined in an altogether satisfactory manner. The normal thyroid gland contains 2 mg. of iodine per gram of the dried substance; the maximum total store of iodine is 25 mg. When the iodine content falls below 25 mg. the demand made upon the gland for thyroxin by the body tissues is greater than can be supplied, with the result that thyroid enlargement occurs in the effort to supply the deficiency. Some have advocated saturation of the thyroid glands of these children by giving iodides four grains three times daily for two weeks, twice yearly. This plan seems unwise, as it has been shown that simple adenomata may be rendered toxic by excessive intake of iodine. Other workers have found that much smaller doses given once a week throughout the year are safer and equally as efficient in preventing and reducing adolescent goiter. The health authorities of Buffalo, N. Y. have tried iodization of the city drinking water, but the numerous disadvantages of this plan are apparent. Much of the same criticism can be directed against the plan of mixing sodium iodide indiscriminately in the population's table salt.

Our own State Board of Health is manifesting interest in this prophylactic work. While I have no data showing the incidence of adolescent goiter in this section of the State, I am convinced that the number of cases is sufficiently large to justify its employment provided that the co-operation of the local profession can be secured in carefully observing the children under treatment. Plummer, in emphasizing the danger of indiscriminate, uncontrolled use of the drug for this purpose, states that nearly fifty per cent of the rare cases of hyperthyroidism associated with adenoma of the thyroid that have come under his observation before the twentieth year of life have followed the administration of iodine. Toxic adenoma, however, is not frequently seen in indivduals under twenty years of age.

Non-toxic adenomatous and colloid goiters in adults usually have their origin in the goitrous changes occurring during the earlier life of the patient. The enlargement increases during periods of stress and strain in the individual's life. Menstruation, pregnancy, the menopause and prolonged anxiety or worry exaggerate the tumor. Most of them require no active treatment; if associated with symptoms of thyroid deficiency, thyroxin or thyroid extract is indicated. Some of them because of their size or prominence cause pressure symptoms or such disfigurement of the patient as to make surgical intervention necessary. Moreover, it is a well known fact that many simple adenomatous goiters after the patient's thirtieth year become toxic and thus require removal.

Sub-Thyroid States

Another class of thyroid disorders not so frequently seen are the individuals with cretinism and myxedema. Cretinism originates in foetal or infantile life and is usually not discovered until at the end of the patient's first year when the infant is found to be physically and mentally backward. It is due to a lack or absence of thyroxin in the tissues, and, unless supplied, the characteristic failure of the child to grow in stature, the tendency to bloated face, flattened nose, drooping jaw, thick, dry, protruding tongue; dry, scaly skin, thin hair, dental defects, "pot belly," pads of fat, muscular weakness and mental retardation, advertise unmistakably the nature of the disease. Cretins are more common in regions where "endemic" goiter prevails, and it has been shown that if thyroid extract or thyroxin is administered to the mothers during pregnancy its incidence can be materially lowered. Just as we have learned that rickets, scurvy, beri-beri, etc., are deficiency diseases requiring adequate intake of the lacking vitamine, so treatment of thyroxin-deficient cretins naturally calls for vigorous and persistent administration of thyroxin or thyroid extract. The results, if therapy is started early, are usually striking; if neglected, the subjects become useless drones upon society.

Myxedema is a disease of adult life also characterized by a lack or absence of thyroxin. It is seen chiefly in females between thirty and sixty years of age usually showing no thyroid enlargement. It is not endemic and its etiology is probably not known, though a small percentage of cases results from previous acute thyroiditis. The outstanding characteristics of the disease are quite similar to those of cretinism. The thyroid gland is atrophied and the basal metabolism is decreased. The onset of the disease is slow, the patient's usual complaint being lassitude and increase of weight

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in spite of a failing appetite. In the advanced types the skin is dry and rough particularly over the hands, arms and legs; the nails are brittle, the body temperature is subnormal, sweating is often absent, the hair and eyelashes are dry and fall out, and the patient complains of being cold. The facial features are broad and mask-like with thick lips and nostrils; fat-like, non-pitting infiltration of the subcutaneous tissues is general but more abundant about the arms, buttocks and supraclavicular fossae. The special senses are dulled, mental processes are slow, and the patient appears calm and placid. Fatigue and drowsiness complete the picture suggesting a hibernating animal.

Many cases of myxedema pass unrecognized by the physician and are likely to be regarded either as nephritis or pernicious anemia. The lowered basal metabolism and the absence of the blood and urinary changes seen in pernicious anemia and nephritis will remove any doubt as to the nature of the disease. Thyroxin or thyroid extract have a specific effect in the treatment of myxedema. No rule for dosage can be suggested, as the degree of thyroid deficiency will determine the amount required. Furthermore, it is a well known fact that different preparations of thyroid extract vary considerably in their potency. Ordinarily 2 mg. of thyroxin is equivalent to three and one-half to four grains of thyroid extract. The effort should be made to bring the patient's metabolic rate to within the normal limits when marked clinical improvement will result. Treatment must be continued indefinitely or relapses may be expected.

"Hyperthyroid" States

There is another important group of goiters associated with what is generally regarded as hyperthyroidism. I refer to toxic adenoma and exophthalmic goiter. Here the clinical picture is in marked contrast to cretinism and myxedema. It would be most interesting and instructive if, by chance, a woman with pronounced myxedematous changes should be placed in a hospital double-room with one showing the clinical syndrome of advanced hyperthyroidism.

In our series of 350 metabolism tests made on 225 patients, nine per cent of them indicated subthyroidism; fifty-eight per cent gave normal readings which were valuable in excluding impressions suggestive of hyperthyroid states. Neurasthenia, the so-called "effort syndrome," and other functional conditions associated with nervousness, tachycardia, etc., compose most of this group. The remainder, thirty-three per cent, showed varying degrees of elevated metabolic rates, most of which were regarded as cases of toxic adenomata. Certainly, in Southwest Virginia exophthalmic goiter is much less common than toxic adenoma. Parenthetically, it should not be necessary to state in this connection that diagnosis of such thyroid disturbances should never be "machine made;" the metabolism apparatus, like other laboratory aids, merely confirms or disproves one's clinical impressions.

Because of the different prognosis and treatment it is important, when possible, to distinguish between adenoma with hyperthyroidism and exophthalmic goiter. In both there is thyroid enlargement; in toxic adenoma the gland shows one or more prominent, palpable nodules, while in exophthalmic goiter the gland is symmetrically enlarged and firm from the diffuse hypertrophy and hyperplasia. Adenoma with hyperthyroidism is comparatively rare before the thirtieth year of life, the average age when the patient seeks medical help being around forty-eight, with seventy-eight per cent over forty years old. In exophthalmic goiter the average age is thirty-seven, with sixty-one per cent under forty years of age. The former group (toxic adenomata) usually give histories of simple adenomatous goiter for many years (average duration eighteen years), with insidious onset of systemic symptoms for one to three years. The development of symptoms in exophthalmic goiter, including the tumor, is generally quite sudden and is frequently associated in the patient's mind with some unusual stress or emotion occurring three to twenty-four months previously.

The etiology of toxic adenoma in some cases can be traced to rather large doses of iodine taken by the patient to remove a simple adenomatous gland; in others the causative factor is not definitely known, but is probably the result of failure of the thyroid gland to be controlled in its function by the actual need and demand of the body tissues for thyroxin. In consequence of this loss of balance between demand and supply there is an excessive outpouring of thyroxin. In exophthalmic goiter the etiology is not known; some cases seem to have their origin in focal infections.

The symptomatology and physical signs in the two conditions are strikingly similar with

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some important exceptions. In both there is evidence of intoxication. The basal metabolism is elevated but in the average case is apt to be higher in exophthalmic goiter. The patients complain that they have the will to do, but the strength to "carry on" is lacking. Loss of weight, in spite of increased appetite, sweating, nervousness, rapid, palpitating heart action, insomnia and weakness are the outstanding features in the history. Physical signs common to both are evidences of emotionalism, restlessness, purposeless movements of the extremities, fine tremor of the extended fingers and tongue; warm, moist skin surface with flushing of the face; rapid pulse accentuated by excitement; forcible, thrusting heart contractions frequently accompanied by systolic blows when hypertrophy or dilatation of the myocardium has occurred.

Reviewing the distinctive features of the two diseases helpful in making a differential diagnosis, we note the following: age incidence, manner and time in which systemic symptoms appear, the difference in etiological factors, together with the gross appearance of the gland in the two conditions. Bilateral prominence of the eyes and pronounced gastro-intestinal symptoms, such as nausea, vomiting, diarrhoea, and at times jaundice, occur in exophthalmic goiter but are absent in toxic adenoma. In exophthalmic goiter there is a fairly constant thrill and bruit demonstrable over the gland even before the bulging eyes appear. A further interesting characteristic of the disease is that its progress is marked by waves of three months' duration followed by periods of improvement.

Recognition of the type of thyroid intoxication largely determines the plan of treatment indicated. Patients with toxic adenoma may be so acute when first seen that preliminary rest, digitalization to combat cardiac decompensation, forced feeding to preserve the body weight, etc., are necessary. As soon as their clinical improvement and falling metabolic rate suggest the advisability of surgical intervention, the adenomatous portion of the gland should be excised. Most of these cases do not require preliminary ligation of the superior thyroid vessels. Some of the less toxic ones respond to rest and X-ray or radium treatment of the gland, but the disease can be controlled more quickly and satisfactorily by partial thyroidectomy. These patients generally show a remarkable clinical improvement and basal metabolism rates approximating normal within three weeks after operation.

While not denying that heretofore surgery has accomplished more for certain patients with exophthalmic goiter than any other plan of treatment, many surgeons have expressed the feeling that the results were not all that could be desired in view of the frequent recurrence of symptoms or the failure to do more than afford partial relief to the distressed patients.

Recently E. H. Mason, of Montreal, has published a preliminary report of his studies of exophthalmic goiter. He, like many others, regards the disease as not a true hyperthyroid state, but rather a dysthyroidism. The intoxication results, he thinks, not from an excess of thyroxin in the body tissues, as is the case in toxic adenoma, but to "an abnormally formed chemical complex,—possibly an imperfectly iodized thyroxin molecule." Therefore, "the introduction of iodine into the system tends to enable the thyroid gland to manufacture the thyroxin complex in a normal manner, stopping, or at least decreasing, the secretion of an abnormal product."

Acting on this assumption, he has given Lugol's solution (iodine five per cent, potassium iodide ten per cent) in doses of minims v to xv daily to patients with exophthalmic goiter with the most remarkable results. Within one to two weeks after its administration striking clinical improvement in the patient's condition with an equally prompt reduction of the metabolic rate are noted. His case records reported in *The Canadian Medical Association Journal* might make one doubt the evidence were not the author's reputation and integrity above criticism.

While implying that the agent has not been employed in a sufficiently large number of cases to justify the prediction that the results will be uniformly as good, he shows that even as a preliminary preparation for thyroidectomy administration of Lugol's solution makes vessel ligation unnecessary in the acute cases. Furthermore, symptoms recurring following previous subtotal thyroidectomy respond to the drug equally as well as those primarily treated. Whereas in patients with toxic adenoma there is every reason to believe that Lugol's solution would have the effect of throwing kerosene on a fire to quench it, in exophthalmic goiter the devastating flame of intoxication is apparently controlled by its use. If

further and more general experience verifies Mason's present results, this contribution to therapeutics will rank as a boon to mankind along with such specifics as antitoxin in diphtheria, quinine in malaria, arsphenamine in syphilis, and insulin in the treatment of diabetes.

SUMMARY

An effort has been made in this paper to show that:

1. The function of the normal and abnormal thyroid gland is intimately related to the available iodine.
2. Basal metabolism estimations are helpful in the diagnosis, and indispensable in the treatment of most thyroid disorders.
3. "Endemic" adolescent goiter is an iodine deficiency disease and is preventable.
4. Cretinism and myxedema can be controlled by adequate doses of thyroxin or thyroid extract.
5. Toxic adenoma and exophthalmic goiter are distinct disease entities.
6. Sub-total thyroidectomy is the most satisfactory treatment of toxic adenoma.
7. The administration of Lugol's solution promises to be a distinct advance in treating exophthalmic goiter.

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X-RAY EXAMINATION OF THE APPENDIX: ITS DIAGNOSTIC VALUE.*

By DANIEL D. TALLEY, Jr., M. D., Richmond, Va.

It is generally conceded that many appendectomies are performed without securing desired results, and it is likewise true that a diseased appendix may produce a train of symptoms which do not definitely reveal its presence. Therefore it is not unjustifiable to feel that any diagnostic method which may give definite aid in the investigation of appendiceal pathology is valuable enough to be employed in at least a certain number of the suspected cases. The acute appendix being as a rule out of the domain of the roentgenologist, this discussion will be limited to a consideration of the chronic and subacute cases.

At the outset it is the writer's desire to stress two points. First, there is no intention to belittle the importance and value of the usually employed methods of clinical diagnosis, including history, etc., nor to make this special method a short cut and thereby to eliminate the necessity of a thorough general examination. Secondly, it should be emphasized that the roentgen examination of the appendix is only a part of the routine X-ray examination of the gastro-intestinal tract, the whole tract being examined in every case unless for some special reason.

For the benefit of those not skilled in the practice of roentgenology, it may be said that the barium meal enters the appendix in the majority of cases, causing the lumen to be partially or completely visualized in proportion to the completeness of the filling. The cecum and terminal portion of the ileum should likewise be visualized at the proper period of time after the administration of the meal. On palpation the normal cecum and appendix exhibit a considerable amount of mobility under the fluoroscope in most cases, which greatly aids us in the study of these parts. The barium meal is believed to give far more information as to the appendix than the barium enema.

According to most observers the various points of interest to be sought for in the examination of the appendix are: (1) Presence of tenderness over the appendix shadow, (2) Variations in shape of the barium filled appendix, (3) Abnormal position, (4) Fixation, (5) Retention of barium within the appendiceal lumen for an abnormally long time, (6) Presence of enteroliths within the lumen, (7) Abnormal position or adhesions of terminal ileum or cecum, (8) Incompetent ileocecal valve, (9) Ileal stasis, (10) Abnormalities of gastric function.

Several of these points may be dismissed with a word or two, but there are at least two of them which warrant discussion in detail.

Practically every article on this subject mentions tenderness over the appendiceal shadow as being of value in establishing a diagnosis of appendiceal pathology, but it is the writer's opinion that as a rule not enough relative importance has been given this finding and not enough has been said concerning the eliciting of this tenderness.

Just here a few words may be said concerning the ordinary palpation of the abdomen as compared with palpation under fluoroscopic control. The value of this latter presupposes ordinary palpatory skill on the part of the roentgenologist. In the ordinary clinical palpation, tenderness over McBurney's point is considered as valuable evidence in favor of appendiceal inflammation, but it is dangerous to take

*Read before the Society for Surgical Research at Richmond, Virginia, April, 1924.

it for granted that the appendix is beneath this point, for it may lie anywhere from the under surface of the liver to the depths of the pelvis, and the lateral variation of its position may likewise be considerable, even excluding the likelihood of a visceral transposition. Under the fluoroscopic screen we have a threefold advantage: (1) the position of the tip of the cecum or the barium filled appendix itself may be located, (2) by manipulation or change of posture of the patient the cecum may be moved to a point where it is most accessible to palpation, (3) the fact that we are really looking at the object of our interest enables us to concentrate our energies rather than to grope blindly, and localized tenderness may often be discovered which might ordinarily be overlooked.

In regard to the localization of the position of the appendix with the ordinary barium and buttermilk meal, some filling of the lumen of the organ will take place in most cases either six hours or twenty-four hours after the administration of this opaque meal, at both of which times observations are made as a routine. In those cases where the lumen is not filled, it is a reasonable deduction that the position of the organ is in all probability just to the inner side of the tip of the cecum, provided the latter be itself free from evidence of pathology which fixes or distorts it. As previously stated, however, the position of the cecum is by no means constant in all individuals. A very definite proportion of all patients examined (particularly females with a visceroptotic tendency) show a pelvic cecum which cannot be satisfactorily palpated under the screen. In our experience the only satisfactory way to elevate the cecum in the majority of such cases is to make the patient assume the knee chest position for a few minutes. The patient is then instructed to straighten out prone and as quickly as possible to turn to the back, during which time the head of the table is gradually lowered so that we have attained the Trendelenburg position. The cecum, if not adherent, will now be found to have moved upward towards the pelvic brim and may usually be carried still further upward without difficulty by the palpating fingers. This manoeuver has been of vast help in many cases, for when the appendix lies in the pelvis, it is apt to be obscured by shadows of other portions of the intestine, it is not as accessible to palpation as when out of the pelvis and the terminal ileum may not be satisfactorily studied. Tenderness, if present, may be far better brought out when the organ has for a background the rigid ileo-psoas muscle and iliac bone, than when it lies deep in the basin of the pelvis surrounded by soft structures.

The study of the pelvic appendix has been taken up in some detail because this is not an unusual position for the cecum to assume. When the location is postcecal the cecum may often be pushed aside by the palpating fingers and the organ thus made accessible. In the type of individual opposite to the visceroptotic (so-called sthenic type), the appendix may lie well above the crest of the ilium far above McBurney's point, and where the organ is displaced in other directions by adhesions or by reason of anatomical variations, the value of roentgenological localization is obvious.

Whereas in the acute cases of appendiceal inflammation the tenderness may be generalized over the right iliac region, fluoroscopic studies have justified the decided opinion that in most of the chronic cases this tenderness is localized over a small area corresponding to the position of the appendix, or, if not strictly localized, that a point of maximum tenderness will be found over its location. A very striking demonstration which has been carried out many times is actually to move the cecum and appendix to another area, when we will find that the tenderness shifts to the new area leaving the old position free from pain on pressure. This manoeuver of course cannot be carried out if the structures in question are fixed by adhesions. Upon the degree of tenderness, and its tendency to correspond with the position of the appendix, depends the positive value of our conclusions. Complete muscular relaxation is of course desirable for accuracy of observation and patients with moderately thin abdominal walls naturally offer less difficulties than very stout ones.

Fixation of the appendix by adhesions may be easily demonstrated in many cases, though thorough palpation is advisable to make sure that true fixation is present. Abnormal position or distortion of both cecum and appendix are of considerable assistance here. Where adhesions are found and no localized tenderness is present (especially if the position is such that palpatory pressure can be made satisfactorily) the appendix is reported as pathological without attempt at diagnosis of active disease. The question of active inflammation

in such cases is believed to be beyond the scope of the roentgenologist.

The presence of constrictions, kinks, irregular lumen, etc. may be of some value, but should be most carefully studied for permanence, as such phenomena may not be due to disease.

The presence of barium in the terminal ileum for an abnormally long period of time (ileal stasis) suggests pathology in the ileocecal region and may be contributory evidence towards the detection of appendiceal pathology.

Adhesions which distort the cecum have been referred to above. The terminal ileum may likewise be involved in the process and its variation from the normal position demonstrated.

Retention of barium in the lumen of the appendix for a considerable time after the cecum has emptied itself is supposed to indicate poor drainage and therefore an appendix which is a potential source of trouble. We have never made any special study of this phenomenon, but do not believe that a diagnosis of appendiceal disease should be made on its presence alone, without further evidence.

Incompetence of the ileocecal valve is likewise thought by some observers to indicate or suggest pathology in the appendix. The writer is frank to say that he has never attached any importance to this phenomenon as being an aid to making such a diagnosis.

The presence of an irritative lesion in the appendix may cause pylorospasm which is manifested roentgenologically by abnormal gastric peristalsis and delayed gastric motility. It may be interesting to note that the work of Alvarez and others tends to prove that this is not a reflex pylorospasm, but due to muscular contraction waves travelling directly upward throughout the length of the small intestine from the cecum to the pylorus. The value of such gastric manifestations toward making a diagnosis of appendiceal inflammation is only contributory, as the same abnormalities may occur from lesions elsewhere in the tract. Where the findings elsewhere are negative and the appendix is suspicious some importance may be attached to the unusual gastric behavior.

Something has been said concerning the tendency on the part of the enthusiastic roentgenologist to make too many positive diagnoses of chronic appendicitis. In order to investigate at least our own tendency in this respect, we have reviewed our last 1,000 gastro-intestinal X-ray examinations (the cases in which the appendix had been removed being omitted), and have found that in this series appendiceal pathology was diagnosed 294 times. This signifies a diagnosis of appendiceal disease in twenty-nine and one-half per cent of cases exhibiting gastro-intestinal symptoms. We have the impression that this percentage may be somewhat higher than has been recognized as usually constituting the incidence of such pathology, but it is certainly not believed in itself high enough to warrant any particular suspicion that we are basing our diagnoses on unsound evidence.

Finally it is desired to speak briefly as to the possibility of making a negative diagnosis of appendiceal disease by means of X-ray examination. In attempting to do so it is believed that we are treading on dangerous ground and that in perhaps the greater number of cases with negative X-ray findings the roentgenologist will have performed his full duty when he states that no X-ray evidence of disease is present. In some cases, however, perhaps we may say many cases, the lumen of the organ is filled so perfectly and the position in the right iliac fossa admits of such satisfactory palpation and manipulation that it is difficult to conceive how real disease could be present without giving roentgen evidence. If, in addition, a gastric or duodenal ulcer or a gall stone has been discovered to account for the symptoms, a negative diagnosis is further strengthened.

Conclusions:

(1) Granting ordinary palpatory skill on the part of the roentgenologist, palpation under fluoroscopic control possesses advantages over palpation without such control.

(2) Demonstration of a point of definite, persistent, localized tenderness which has its maximum intensity directly over the position of the appendix as determined fluoroscopically, indicates the presence of appendiceal inflammation.

(3) Evidence of adhesions affecting the appendix indicates pathology.

(4) Other signs are less valuable.

(5) Pathology cannot be positively excluded by X-ray examination, but in certain cases negative findings are of distinct value.

104 *Professional Building.*

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ETIOLOGY, DIAGNOSIS AND MEDICAL TREATMENT OF PYOGENIC INFECTIONS OF THE KIDNEY.

By F. J. WRIGHT, M. D., Petersburg, Va.

For the sake of brevity I will not discuss all of the pyogenic infections of the kidney: only taking up those commonly met in a general practice.

Pyelitis and Pyelonephritis

To separate these two would be a distinction rather than a difference because you can hardly have an infection of the kidney pelvis without the kidney substance being more or less involved.

The predisposing causes of pyelitis are: Female infants, pregnancy, stones either in the kidney or ureter, ureteral stricture or any growth causing pressure on the ureter, thus obstructing it, nephroptosis acting by interfering with drainage, gonorrhoeal infections—more common in females, focal infections, general pus infections, typhoid fever, septicaemia, and the acute exanthematous diseases.

Exciting Causes—The most common organism causing pyelitis is the colon bacillus. The staphylococcus, albus and aureus, and streptococcus are frequently the cause, as is occasionally the bacillus pyocyaneus.

Symptoms—There may be an acute, subacute or chronic pyelitis, the symptoms varying according to the degree of infection and the organisms responsible therefor. A typical acute pyelitis is usually ushered in with a chill, or chills, remittent or intermittent. The temperature rises and with it come a general malaise, aching of the head, back and the muscles: frequently nausea and vomiting,—in fact, the general symptoms of any infection. The urinary symptoms usually, but not always present, are: frequency, some pain and urgency, especially at the end of micturition. At times there is pain referable to the kidney and right rectus rigidity, simulating appendicitis. While pyelitis is probably more frequently bilateral, yet it is a well known fact that it is often unilateral. On urinalysis examination the urine is acid and shows numerous pus cells, and frequently red cells, and, according to extent of involvement of the kidney substance, no casts, or numerous hyaline, fine and coarse granular and pus casts. A blood count shows, 15,000 to 20,000 whites, and I have seen one case showing 35,000.

Diagnosis—This is not always as easy as the text books indicate. An acute case may simulate malaria, pneumonia, appendicitis (if right kidney only is involved), nephrolithiasis with pus infection, pyonephrosis and perirenal abscess.

Malaria may be ruled out by an examination of the blood, even if no malarial organisms are present, as in malaria you have a leucopoenia and the urine should not show pus.

Pneumonia can be ruled out by a careful and sometimes repeated examination of the chest. Almost always there is a higher white count and no pus in the urine, or a small amount, if any.

The differentiation from appendicitis is not always so easy in those cases showing right rectus rigidity, vomiting and considerable pain. The temperature is usually higher in pyelitis. The urine should not show pus in appendicitis. The blood picture is very similar and in some cases abdominal rigidity is as great in one as the other. I recall one rather severe case of pyelitis with high fever three or four days when he began to have severe abdominal pains and marked rigidity. I made a diagnosis of appendicitis and asked that my friend, Dr. J. B. Jones, see him. He operated at once and found a very acute appendix, almost gangrenous. In this case, the pyelitis did not clear up for four weeks after operation. An X-ray has often cleared up doubtful cases.

Nephrolithiasis with infection can only be ruled out by X-ray or ureteral catheterization, or both.

Typhoid fever can be recognized by leucopoenia, observation, early blood culture and positive Widals (aften ten days).

Do not make a diagnosis of pyelitis by finding pus in the urine *unless* you have excluded venereal diseases, or unless the urine is drawn by catheter, in the female. I know nothing harder to recognize in the female infant, unless it be otitis media (unless you look at eardrum), until you can get a specimen of urine.

Medical Treatment—Rest in bed with a light, nourishing diet and an abundance of light, pure water is imperative. In my experience, alkalies in large enough doses to alkalinize the urine have given uniformly the best results. If this does not relieve, I switch to hexamethylenamine, 45 to 60 grs. daily, given in large amounts of water, adding to this sodii acid phosphate grs. x, to each dose of hexamethylenamine in order rapidly to acidify the urine.

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I have seen it stated that the colon bacillus cannot live in an alkaline urine. To the truth of this I cannot testify, though I do know some cases will not yield to any medical treatment when the urine is acid. In some cases success will be had by repeating first the alkalies and then the acid phosphate and hexamethylenamine, again and again.

A culture made of the urine and a vaccine made of the infecting organism and given every three to five days will sometimes clear up an obstinate case. If the cocci group of organisms prove to be the cause, I would advocate gentian violet, one per cent solution, not using over 5 mg. to each kilogram of body weight: in colon bacillus infection, mercurochrome one per cent, intravenously, 5 mg. to each kilogram of body weight. The mercurochrome will at times, produce a right severe reaction. Both the gentian violet and mercurochrome should be given intravenously.

When there is a stricture of ureter, or stone, of course, you have to resort to surgical measures which will be covered by the writer of the paper on surgical treatment.

Pyonephrosis

This is always secondary to some obstruction of the ureter, plus infection. The obstruction may be a stone, a stricture, malignancy somewhere along the ureter, and it may begin as a hydronephrosis, or follow a pyelonephritis.

Symptoms—Pain in the lumbo-inguinal region, evidence of bladder irritation, such as frequent painful micturition, are present. The urine will show pus if the obstruction is not complete. In the kidney region there can be felt, especially in a thin subject, a fluctuating tumor, dullness on percussion. X-ray shows the presence of a tumor in the kidney region which may not resemble a normal kidney in outline if distention be great. The general symptoms are those of a pyelonephritis, chills, sweats, rapid pulse and high, irregular temperature, but as a rule greater pain.

Diagnosis—Pyelonephritis usually shows a greater size of the kidney, maybe the presence of little or no pus in the urine, more pain, more severe general symptoms and history of longer duration of symptoms.

In nephrolithiasis without entire obstruction, we have normal or slightly enlarged kidney as evidenced by palpation, percussion or X-ray. There is little or no fever, unless infected. Blood and pus may be found in either, but there is apt to be more blood in kidney colic.

Differentiating from tumors of the kidney, we find that cystic tumors do not appear suddenly, and there are no early general constitutional symptoms. Papilloma shows no early increase in size of kidney and no acute general symptoms. An enlarged cystic gall-bladder might confuse. Gall-bladder empyema gives practically the same general symptoms but presents no urinary findings, except those encountered accompanying any general infection. There is usually marked rigidity of the hypochondrium as well as tenderness about the end of the tenth rib, with percussion, dulness decreasing as the loins are approached: while in pyonephrosis there is dullness from the flank forward, sometimes to the middle line. In empyema of gall-bladder there is usually a history of indigestion of several years' standing.

Medical Treatment—There is no curative medical treatment. Anodynes, such as morphine or the milder opiates, are indicated, with, of course, supportive treatment.

Nephrolithiasis

In the opinion of good men, you have to have the presence of some organisms plus imperfect drainage of the kidney before you can have stone formation; therefore, in the etiology of kidney stone, I think it imperative that you look for infection somewhere in the body; the tonsils, teeth, genito-urinary tract (prostate, stricture of ureter or urethra), gall-bladder, bronchi, or gastro-intestinal tract. A few blood cells or bacteria may form the nucleus of a stone.

Diagnosis—The diagnosis of kidney stones with a typical colic is usually easy—severe pains in the back on one side radiating down towards the bladder, aching of the testes with retraction of the scrotum in the male, sometimes burning and frequent urination, blood cells in the urine microscopically and often macroscopically. On the other hand, there may be the so-called "silent stones," in which there may be few symptoms, little urinary evidences of stone, little or no aching in the lumbar region. Here the X-ray will reveal the true condition.

The *Medical Treatment* in the presence of colic is morphine sulphate gr. ¼—½, repeated, if needed. The pain is sometimes so great that ether or chloroform has to be given

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until morphine has time to act. Hot applications help; have a patient get in a tub of water as hot as can be borne. After the attack advise drinking an abundance of water. Alkaline diuretics seem to do good. Of course, if the stone is found to be large, there can be only symptomatic medical treatment. On the other hand, the smaller stones are frequently passed. The so-called "silent stone" is not benefited by medicines other than urinary antiseptics.

Perinephritic Abscess

This condition may be due to an extension of pyelonephritis, general pus infections, or local foci of infections. It has been shown to be due to bacterial infections beginning in the medulla of the kidney, finally breaking through the capsule into the perirenal tissues. Traumatism may be a factor.

Symptoms—The symptoms vary with the causative factors. There is always more or less fever, a leucocytosis, general malaise, and loss of appetite. Locally, there is tenderness, and if extensive oedema, a sense of aching in the lumbar region. There may or may not be pus and blood in the urine, depending whether or not there is communication with the abscess cavity and the pelvis of the kidney.

I recall one case which, while not strictly a perinephritic abscess, I believe was due to a bacterial infection, which in time would have become perinephritic. The history is briefly this: A married woman, white, with a negative family history and negative examination, other than mentioned below, came to me after a fall, four or five days before, not knowing at the time, or even afterwards, that she had hurt herself. Soon after the fall, she had pain in the left lumbar region, which did not radiate into the groin. There were no vesical symptoms. A leucocytosis of 18,000, a temperature 99°-101°, and the well known general symptoms of a mild infection, with tenderness over the left kidney, were found. X-ray examination and cystoscopic examination did not help us. I made a diagnosis of a probable abscess beneath the capsule, in which Dr. Henry Turner concurred. On operation by Dr. Turner, we found a small abscess just beneath the capsule, containing about one ounce of pus. This was incised and drained. In about three weeks she was discharged as cured. I mention this case because of the negative urine all the way through, the negative cystoscopic findings, with a normal pelvis and a negative X-ray.

Medical Treatment—Symptomatic treatment for relief of pain, and supportive treatment with good, light, nourishing food is advised. The curative treatment is always surgical.

49 *South Market Street.*

FOCAL INFECTIONS IN THE TONSILS AND ADENOIDS.*

By MEADE EDMUNDS, M. D., Petersburg, Va.

The importance of the focal infection theory is now generally recognized by the medical profession. All of us know that if infectious foci can be detected and removed, before permanent damage has been done, as the result of the distribution through the body by way of the lymph and blood channels or by direct swallowing of bacteria and toxins, much can be done towards the prevention of pathology in organs and tissues remote from the orginal focus of infection.

Of all the diseases of the human body due to focal infection, the focus may be found in eighty per cent of cases above the collar bone, because from their exposed position, the mouth, its contained structures and the cavities connected with it, afford an ideal gateway for infection. Here are listed the teeth, accessory nasal sinuses and the tonsils and adenoids. It is the latter, the tonsils and adenoids as foci of infection, that we will consider.

As yet there has been no satisfactory answer to the question of the role played by the tonsils in the economy of the body. It does not follow from this that they have no influence on the organism, but extensive observations on children on whom tonsillectomies have been performed have not shown any disturbance as a result.

That the tonsils harbor various bacteria is shown by T. Nakamura[1] in a bacteriological study of 2,048 tonsils removed at the Mayo Clinic during a period of one year, on account of recurring attacks of tonsillitis or more often because they were believed to be foci of infection in patients suffering from ulcer of the stomach, chronic arthritis, myositis, nephritis, etc. Of a group of 1,250 tonsils, fifty-two per cent revealed hemolytic streptococci, fifty-eight per cent green producing, and eighteen per cent indifferent streptococci, alone or with other

*Read at the meeting of the Southside Virginia Medical Association, at Victoria, June 17, 1924.

types. In 841 tonsils, microorganisms other than streptococci were studied also. Staphylococci were frequently found in large numbers and were usually hemolytic; micrococcus catarrhalis was found in sixty-eight per cent; other organisms included staphylococci aureus and citreus, bacillus influenza, B. diptheriae, B. coli and Friedlander's bacillus.

Giulio Martuscelli and Bozzi Pasquale,[2], in an attempt to determine the role played by the tonsil in the development of bacterial infection, conducted a series of experiments consisting in removing as thoroughly as possible one tonsil in dogs, waiting until the operative area had completely healed and then smearing on it an active culture of virulent microorganisms. The neighboring glands were then investigated for any evidence tending to show whether or not the residual fibrous tissue allowed penetration of the bacteria inoculated, and thus gather some information as to the role of the tonsil with respect to bacterial invasion. From their findings the authors are led to conclude that the tonsil forms in truth a portal of entry for bacterial infection and that when they are removed and there is interposed in its stead a newly formed fibrous tissue the latter practically always forms an effective barrier against the passage of microorganisms.

The diseased tonsil may be of any size. It may be large and mushy with a moth-eaten appearance, or small and fibrous, or again it may be buried so deep between adherent pillars as to be hardly visible. The surface usually has a glazed appearance and the crypts, though often invisible, may exude on pressure fluid pus or cheesy masses. Adherent pillars are a sign of previous inflammation. The question of determining an infected or diseased tonsil and the part it is playing in some chronic condition is no easy matter. The writer believes that the inspection and examination of the throat is the least important link in the examination. What is more important is a careful history and a thorough physical examination and checking by an internist, particularly in adults whose chief complaints may lie outside of the throat.

Most of us are familiar with the usual pathological conditions for which infected tonsils and adenoids are held responsible, namely, endocarditis, rheumatism, chorea, myositis, pyuria, recurrent infections of the nasopharynx, otitis, eustachian catarrh, deafness, mouth breathing and cervical adenitis. However, it is not very widely recognized that infection in the tonsils and adenoids is frequently the explanation of an attack of hematuria and albuminuria, and that tonsillectomy is a necessary mode of treatment. The writer has recently seen two cases of acute nephritis with severe hematuria in children, where no definite etiology could be established. Neither case gave a history of having had any of the communicable diseases, but both cases had marked post-nasal infection, with enlarged and infected tonsils. In this connection two cases of medium and marked severity of kidney infection are cited by Edmund Cautley[3] as entirely clearing up upon the enucleation of the tonsils. In such conditions where no definite etiology can be established, Cautley says that the tonsils are especially to be viewed as a focus of infection, but it is a moot point whether there should be an enucleation at once or not until the hematuria has subsided.

W. J. Mayo[4] says acute nephritis is often due to toxin, not bacteria, from foci in teeth, tonsils, gall-bladder, duodenal ulcer, etc., and especially is this true in those cases of acute nephritis going on to chronicity.

The writer recalls the case of a young dentist, under thirty years of age, who had been refused life insurance on account of an albuminuria and a few casts. No definite foci of infection could be found and his physical examination was entirely negative except for enlarged "mushy" tonsils. His previous history showed no definite attacks of acute tonsillitis. He was advised to have his tonsils removed and, since their removal, he has been able to obtain life insurance at the usual rating. Of course he was given the usual advice as to diet and habits but to my personal knowledge he followed neither but did take one 8 oz. bottle of Basham's mixture prescribed by his family physician.

Another condition which I believe is often due to focal infection, particularly in the tonsils and adenoids, is malnutrition, especially in children. Earl M. Tarr[5] says that the study of a large number of records shows that diseased tonsils are a prominent factor in undernutrition.

In our enthusiasm for eradicating foci of infection we must not lose sight of the fact that the primary focus, wherever it may be, is not always the major focus. A careful study may reveal secondary foci in the stomach, gall-bladder, appendix, etc., and it will be readily

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seen that advising such a patient to have infected teeth and tonsils removed without attempting to treat the other conditions is very apt to lead to disappointment.

One often hears the remark that too many tonsils are being removed. That may be true in adults, or rather the adult cases should be more carefully selected, but the writer does not believe for a minute that too many children have their tonsils removed. All of us know that childhood is the period of all periods in which to correct handicaps and prevent disease, and we also know that children with clean throats are certainly less prone to middle ear disease, mastoiditis, endocarditis, etc., than those with infected tonsils. A well known pediatrician has said that no child should ever be allowed to have but one acute attack of follicular tonsillitis.

Tonsillectomy should be regarded as a major operation, should carry the same well balanced indications as any other major operation and, in my opinion, is the only procedure justified in the treatment of diseased tonsils. The crying needs are not new methods nor new instruments, but better diagnoses and more careful selection of cases for operation.

Properly applied tonsillectomy has wonderful potentialities, improperly applied it will surely be disappointing to both patient and physician.

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Terminal Building.

INTUSSUSCEPTION.*

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Over thirty per cent of the cases of acute intestinal obstruction are caused by intussusception. This condition is more frequently observed in infants and children than in adults. In a series of 115 cases of intussusception Pitts[12] reports that ninety per cent of the patients were under fifteen years of age. Codman[3] in a series of twenty-seven cases reports an incidence of sixty-six and two-thirds per cent in infants and children, Goldschmidt[6] an incidence of sixty-five per cent in twenty cases, and McGregor[8] states that in his fifty-nine cases ninety-three and three-tenths per cent of the patients were under twenty years of age. In a series of twenty-five cases of intussusception operated upon at the University of Virginia Hospital, seventeen, or sixty-eight per cent, of the patients were under fourteen years of age. In the remaining eight patients the ages ranged from seventeen to sixty-nine years. Nine of our patients were one year of age or under; the youngest was seven weeks old. Males are more often affected than females. Holt[7] records the male incidence in 268 cases as sixty-five per cent; while in Bolling's[1] series of fifty cases sixty-two per cent were males. In our series there are thirteen male patients and twelve female.

The etiological factors concerned in intussusception in infants and young children are different from those in adults. In the former the cause is generally to be looked for in some abnormality of development or function, or in both. The great mobility of the cecum, ascending colon and ileum in early life is generally thought to be a predisposing factor. In the young the bowel is much more responsive to irritants and its movements less well regulated than in the adult. It has been shown experimentally that abnormal peristalsis may cause intussusceptions. Nothnagel[10] has shown by the application of electric stimuli to the wall of the intestine in experimental animals that invaginations could be formed by the irregular action of the the intestinal musculature. Morris[9] was able to obtain like results by the application of a small amount of sodium carbonate to the wall of a rabbit's ileum. In infants and children peristalsis may readily be stimulated to an abnormal degree by the presence of some diseased condition of the bowel itself, or by some dietary indiscretion. In fifty per cent of van de Ven's[14] cases there had been some preliminary gastro-intestinal derangement. Perrin and Lindsay[11] believe that due to some gastro-intestinal disturbance there is a swelling of the lymphoid tissue of the intestine, which, when it becomes enlarged, acts as a foreign body in the intestinal wall. The presence of this tumor they believe is the cause of the majority of intussusceptions. In a certain number of cases in both

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infants and adults a Meckel's diverticulum has been found to be the cause of the invagination. This structure may become inverted and act as a polypoid tumor projecting into the lumen of the gut. Elliot and Corcscaden[5] collected twenty-nine cases from the literature in which intussusception was associated with Meckel's diverticulum. The mobility of the cecum and ileum seen in the infant may persist in the adult and may act here also as a cause of intussuscepton. Cubbins[4] calls attention to the length of the mesentery of the terminal ileum and the presence of a mesentery of the ascending colon as etiological factors in certain cases. Tumors of the intestine are a comparatively frequent cause of intussusception in the adult. Of 300 adult cases collected by Elliot and Corcscaden, thirty-three and one-third per cent of the intussusceptions were due to tumors. In sixty instances the tumors were benign and in forty malignant. Non-malignant ulcerations may also cause intestinal invagination. In certain cases no cause of intussusception can be found.

Only two of our series of seventeen cases in infants and children under fourteen years of age gave any history of an exciting cause of their trouble. In one of these cases the attack followed the eating of a large quantity of berries, and in the other case the trouble started after coasting, the child lying on the sled on his abdomen. Nine of the seventeen cases showed a very movable cecum and ileum. In one case an inverted Meckel's diverticulum was found to be the cause of the intussusception. This patient was a girl four years of age who was brought into the hospital with the typical signs and symptoms of intussusception, the attack having begun four days previously. In the series of eight cases in adults, intussusception was due to the presence of a tumor in five instances. In two cases there was found to be a very movable cecum and ileum, and in one case a Meckel's diverticulum was found at the apex of the invagination. This diverticulum was not inverted but was plastered down to the gut wall causing a dimpling which was evidently the starting point of the intussusception.

Clubbe[2] recognizes four types of intussusception: Ileocecal, enterocolic, enteric and colic. There are two varieties of the first type; one in which the ileocecal valve forms the apex of the invagination, and a second in which the head of the cecum forms the apex. There are also two varieties of the enterocolic type. In the first, the invagination begins in the ileum and passes through the ileocecal valve increasing at the expense of the cecum and colon, while in the second, the intussusception begins in the ileum, but, instead of passing through the valve, pushes into the cecum and colon. In this last variety, on reduction, when the cecum is unfolded, it is found to be empty, while in the first variety the cecum is found to contain small bowel after it is unfolded. The terms enteric and colic are self-explanatory. The majority of intussusceptions are ileocecal in type. In our series of twenty-five cases, ten of the intussusceptions were ileocecal, six were enterocolic, six were enteric and three colic.

The behavior of the intestine in the formation of invaginations has been observed in the experiments of Nothnagel and Morris. Upon stimulation of the bowel the circular muscle fibers at the point stimulated suddenly contract in tonic spasm; peristaltic movements of the longitudinal fibers of the neighboring gut then cause a slowly progressing engulfing of the portion of bowel which is in a state of spasm, and the ascending intussusception thus continues until the mass of engulfed mesentery becomes so large as to prevent further progress.

The pathological changes of the intestine caused by intussusception are dependent upon changes in the circulation. The veins and lymphatics are compressed, because of their relatively thin walls, before the arteries. Thus venous engorgement is introduced. Fluid and blood escape from the vessels and infiltrate the intestinal wall with subsequent escape of blood into the intestinal lumen. The involved intestine becomes markedly edematous and it is because of this condition that reduction of the intussusception is so often difficult. When the arterial supply becomes embarrassed gangrene ensues. Obstruction of the intestinal lumen may be entire or partial. In certain cases in which obstruction is only partial the normal outer portion of the intussusceptum, or the entering portion of the intestine, may become adherent and unite with the upper end of the intussuscipiens, or receiving intestine, allowing the invaginated portion to slough and be passed per rectum. Elliot and Corcscaden were able to collect forty-three cases of this character.

In eight of our cases the intestine had un-

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dergone gangrene and in one case there was an ulceration of the head of the cecum. Three of the tumors causing intussusception were benign and two malignant. The benign tumors included a myoma of the ileum, an adenoma of the ileum, and a "polyp" of the sigmoid. The malignant neoplasms were both sarcomatous, one situated at the duodeno-jejunal junction, and the other in the head of the cecum.*

In ninety-six per cent of our cases the patients complained of severe abdominal pain, in most instances cramp-like in nature, accompanied by nausea and vomiting. In only three instances was the vomitus fecal in character. Stools containing blood and mucus appeared in seventy-two per cent of the cases. The majority of the patients were constipated and the stools contained no fecal matter. Diarrhoea was present in three cases. The temperature was rarely over 100° F. The leukocyte count varied from normal to 28,000; the average was about 15,000. The abdomen was distended in sixty-eight per cent of the cases, and in the majority of cases tenderness was elicited on palpation. Active peristalsis or enlarged loops of bowel were present in thirty-two per cent of cases. A mass was palpable either on abdominal or rectal examination in seventy-six per cent of the patients. This mass was usually described as "sausage shaped." In nine cases the mass was situated in the right lower abdomen; in four cases in the midline below the umbilicus; in two cases at the level of the umbilicus to the left of the midline; in the right upper abdomen in two cases; at the level of the umbilicus to the right of the midline in one case, and in one case the mass protruded at the anus.

The summary of a typical case would be somewhat as follows: The patient, usually an infant or young child, is attacked with severe abdominal pain, cramp-like in nature. Nausea and vomiting soon appear; constipation is obstinate and only mucus and blood are passed per rectum. The abdomen is distended and visible peristalsis can be seen. Tenderness is general and a sausage shaped mass is palpable. The mass may be distinguishable on rectal examination and the examining finger may bring away mucus and blood. Temperature is 100° F., and leukocytes 15,000. The patient appears ill and the pulse is fast and weak.

The diagnosis of intussusception is usually not difficult. Intestinal obstruction was recognized in ninety-six per cent of our cases, and the nature of the obstruction was diagnosed correctly in sixty-four per cent. In infants and children intussusception has to be differentiated from ulcerative colitis and Henoch's purpura. Several cases were referred to us with a diagnosis of appendicitis. In adults intussusception must be differentiated from other forms of intestinal obstruction, principally volvulus. It is in those cases in which obstruction is not complete and fecal stools are passed that diagnosis is at times difficult. An early diagnosis is imperative.

The treatment of these cases should be operative at the earliest possible moment after the onset of the attack. Palliative measures which are intended to reduce the intussusception through distention of the bowel by air or fluid should not be attempted when a surgeon is available. The danger of perforation of a gangrenous gut by such a procedure is very great and the chances of relieving the obstruction are very small. Purgatives should never be given as they only aggravate the condition. That an intussusception sometimes reduces itself is indicated by the cases with histories of several attacks. The purpose of operation is two-fold: first, to reduce the intussusception and, second, to prevent a recurrence. The method of reduction employed is that proposed by Senn, in which an attempt is made to express the intussusceptum from the intussuscipiens by squeezing from below upward. The invaginated portion is milked from its sheath. Traction is contraindicated. Tumors, diverticula and ulcers should be removed to prevent recurrence. The treatment of an abnormal movable cecum and ileum is more complicated. A number of operations have been devised with the purpose of attaching the cecum to the abdominal wall and shortening the mesentery of the ileum. Cubbins recommends suturing the ileum parallel to the cecum to prevent this condition. Bolling says that in children no attempt should be made to anchor the cecum. Thorner[13] reports a case in which intussusception recurred three times after the first operation at which time the cecum and ileum were sutured to the peritoneum. At the fourth operation a lateral anastomosis was formed between the ileum and cecum. If gangrene has occurred, resection has to be done. In extremely ill patients it is well to bring the mass up through the incision and form an en-

*This case has been described in detail by Dr. S. H. Watts, Ann. Surg. vol. 53, p. 409, 1911.

terostomy or colostomy as the case may be. In such cases the anastomosis will have to be performed at a later date.

Three cases of our series were treated by reduction of the intussusception alone. In six cases after the reduction of the invagination was accomplished the cecum was sutured to the lateral abdominal wall, and in two cases the mesentery of the ileum was shortened after reduction. Resection with immediate anastomosis was performed in eight cases, and in one case an enterostomy and in another a colostomy was done after bringing the involved bowel outside of the abdominal cavity. Enterotomy was done four times; in three instances, for the removal of a pedunculated tumor, and in one instance for a Meckel's diverticulum.

Several factors influence the prognosis in these cases: (1) the age of the patient; (2) the acuteness of the attack; in acute attacks obstruction is most complete and gangrene appears earliest; and (3) the time elapsing between the onset of the attack and operation; the amount of time varies directly with the degree of intoxication.

The mortality in intussusception is very high. Forty per cent of our patients died. There was a mortality of fifty-five per cent in infants of one year of age or under, thirty-seven per cent in children from one to fourteen years of age, and twenty-five per cent in adults. Only one of the eight patients, a child eight years of age, in which the intestine was gangrenous, recovered. In the cases in which resection was done fifty per cent recovered. One of these patients was the child mentioned above. All of the acute cases operated upon within twenty-four hours after the onset of the attack recovered; of those operated upon after the first twenty-four hours only twenty-three per cent recovered.

Comment

Intussusception is one of the acute abdominal conditions which has thus far failed to yield good results to modern surgery. It is strictly a surgical disease and requires emergency treatment. Intussusception is the most fatal form of intestinal obstruction, due to the fact that an early diagnosis is at times difficult because in some cases the obstruction is not complete. Gas and fecal material may be passed per rectum which may cause much confusion of the picture. In children the practitioner finds it difficult to differentiate the condition from other less serious gastro-intestinal upsets. A diagnosis at the earliest possible moment is imperative, and with care a diagnosis should be made. Prompt application for surgical treatment is essential. The high mortality in these cases is not due to the lack of ability on the part of the surgeon or any fault in his methods, but it is rather an index to the efficiency and diagnostic ability of the medical group which he serves.

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SPASMOPHILIA IN INFANTS.*

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Spasmophilia is the term employed to define the group of metabolic disorders usually seen in infants and manifested by irritability of the central nervous system. This class embraces certain disorders now known to be manifestations of tetany, such as laryngospasm, holding breath spells, convulsions, bronchospasm, rotary head movements and nystagmus. Rickets may or may not be present; more frequently it is present.

The most frequent age is five to eighteen months. Seventy-five per cent of the cases occur in January, February and March. Very similar symptoms are produced by partial removal of the parathyroids, accidentally or experimentally.

Laryngospasm may come on suddenly and be so severe as to demand tracheotomy in a

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few days; from twenty to fifty spasms may occur daily. More convulsions are caused by tetany than by any other cause. It is generally accepted that the frequently occurring convulsions of tetany almost always leave some permanent injury, even though it be slight. Three thousand, five hundred convulsions have been reported in six months from one child.[1]

Spasmophilia was not understood until the study of chemistry and physics was combined with medicine.

For latent tetany, or where the diagnosis is in question, Chvostek sign or facial phenomenon is the most reliable sign. It consists of a quick contraction of the muscles about the mouth, face, or temporal region when the facial nerve is slightly tapped.

The Peroneal sign is more valuable than Trousseau's sign. On tapping over the peroneal nerve at the head of the fibula a quick outward jerk of the foot follows.

Electrical tests are more accurate than the above mentioned, but require electrical apparatus such as is used in hospital work. The increased irritability is measured by the galvanic current, usually on the peroneal nerve.

Life is dynamic and not static and the physical chemist must be active in this work.

As chemistry is the science of the transformation of matter and physics the science of the transformation of energy, life, which from its beginning to its end is a transformation of matter and of energy, is turning more and more to chemistry and physics for the solution of many perplexing problems in the prevention and cure of disease.

"There is constant molecular interchange between the cells and their environment. Cell secretion, cell respiration and cell nutrition are clearly only different aspects of the same whirl of molecular activity."[2]

The study of tetany is the study of stomach acidity, or its complement, alkalinity, and the various accelerators or catalysers called enzymes. The blood has a wonderful capacity for self-adjustment and the preservation of the optimum condition for life.

There are chemical buffers which act chemically to preserve neutrality. A buffer is any substance (present in a solution) which, because of its affinity for either acid or alkali, tends to preserve the original hydrogen-ion concentration of the solution by combining with any acid or alkali which may be added, thus nullifying their effect.[3]

It is the free hydrogen-ions which are responsible for the characteristic properties of all acids. Various foods have the property of binding large amounts of acid and converting the hydrogen into a non-ionized form, thus to all intents and purposes neutralizing the acid. Food of this class renders the hydrochloric acid secreted inactive. Cow's milk has three times as much buffer substance as woman's milk. On breast milk the Ph. has been found to be 3.75 normal infants. On cow's milk, feeding normal infants, the Ph. is 5.3.[4] As the Ph. is expressed in the form of a reciprocal logarithm, Ph. 3 is much greater than Ph. 6. To an infant accustomed to cow's milk, more acid is gradually secreted to account for the larger buffer substance of cow's milk. (As devised by Sorensen, Ph. is a symbol which signifies the logarithm of the reciprocal of the hydrogen-ion concentration).[5] The larger buffer substance continued for a long time will leave little acid, which is necessary to form insoluble tribasic calcium phosphate, thus this important substance is eliminated, leaving the sodium ion in greater excess than the needs of the body. We see therefore that gastric acidity at the height of digestion is controlled largely by the choice of a buffer.

Experimental and clinical evidence points to faulty calcium metabolism as far the most important factor in the etiology of tetany. The study of blood chemistry is now pointing to the inter-relationship of sodium and calcium as an important factor; that is, the ratio in the blood of the calcium and sodium. As calcium is a nerve sedative and sodium is a nerve irritant, a proper balance must be maintained to give a normal nerve irritability. Reduction of calcium and increase of sodium will give increased nerve irritability or spasmophilia. Alkalosis from large amounts of soda for acidosis has frequently produced spasmophilia and tetany. Howland and Marriott have noted great storing up of sodium and potassium and loss of calcium and magnesium in active spasmophilia.[6] When the condition is reversed, the symptoms begin to improve.

Normally, the calcium in infant's blood is 10 to 11 mgm. per 100 c.c. of blood. In eighteen cases of active tetany noted by Howland and Marriott, the average blood calcium was 5.6 mgm. per 100 c.c. serum, a reduction of forty or fifty per cent. Many others have confirmed

this result. With the calcium, which is a nerve sedative, reduced, the sodium ion acts as a nerve irritant. Long treatment of pyelitis by sodium preparation has produced tetany. Limewater or soda should not be used in milk except in acidosis, and the use of magnesia as a laxative should not be long continued.

The diet of most infants suffering from tetany contains a sufficient amount of calcium. Faulty assimilation, due to various causes, is the symptom-complex. Lowered gastric acidity or season, or both, seems to account for the failure of calcium assimilation. A number of investigators including Von Norden have shown that calcium is known to remain in solution only in an acid medium and presumably may only be absorbed from such a medium.[7]

Spasmophilia is rare when breast milk is taken. Long feeding on cow's milk that has been skimmed or heated is often the cause of tetany, specially when little or no other food is used.

The whey of cow's milk aggravates tetany.

During the summer months, cow's milk has three times as much vitamin as it has in the winter, the proportion of salts is also decreased in winter. The experiments of Holt and Fales showed that "the best absorption of calcium intake in young children is when the fat is at least 3.0 grams for each kilogram, and the amount of calcium oxide in the diet is 0.003 to 0.005 grams for each gram of fat."[8] Their experiments showed that low fat intake brings about abnormal digestive conditions with acid foul stools, and calcium intake is much better when fat intake is generous.

Inorganic phosphate of infants' blood can be raised to normal by frequent exposure to the sun's rays and the same result can be accomplished by irradiation with the carbon arc lamp. This chemical action is brought about by the ultra violet ray rather than the visible rays of the spectrum. As demonstrated by Hess, there is a seasonable tide of phosphates and a seasonable tide of calcium. This is due to the fact that the composition of the rays of the sun is not the same at all times in the temperate zone.[9]

Meteorological observation made in New York showed the ultra violet ray much richer in the spring and summer months. With this variation in ultra violet ray, there is a variation in the amount of inorganic phosphate and of calcium the body can metabolize, or a seasonable tide of growth. It is possible to raise the calcium from a lowered 7 mgm. per 100 c.c. to a normal 10 mgm. per 100 c.c. by means of the carbon arc light. Hoag, of Boston, studied eleven cases of tetany using ultra violet ray 50 cm. from the surface of the body.[10] He was able in fourteen days to raise the calcium plasma to normal. Irradiation should not exceed forty minutes a day, beginning with two minutes to the back and two minutes to the front, gradually increasing daily.

Calcium lactate, calcium chloride, ammonia chloride and hydrochloric acid are used for tetany. Calcium lactate, which has been quite widely used, contains only thirteen per cent of calcium, and it would require 140 grains daily to be of value, or two teaspoonfuls. Calcium chloride is obtained in two forms, the crystalline, eighteen per cent calcium, and the anhydrous, thirty-six per cent calcium. It is the anhydrous calcium chloride that we use, giving fifteen grains four times a day. The effect produced by this is very rapid and usually in two or three days the spasmophilia subsides.

Scheer put hydrochloric acid in milk and got an increase of calcium in the blood serum.[11]

Calcium chloride given for relief of tetany, if continued too long, may sometimes cause hyperpnea. In such cases, a marked lowering of plasma bicarbonate may be found. This is probably caused by more complete absorption of the chlorid ion than the calcium ion. The result is much the same as hydrochloric acid placed in the food. In such cases, there is an elevation of the hydrogen ion concentration of the plasma.

The most important instance of a colloid is the human body, "all of the tissues, muscles, fluids of which represent colloid suspensions."[12]

Milk is a colloid and as such is subject to disturbance by small change in the system. All colloid substances are very sensitive to forces affecting their stability. Milk which has been subject to drying, aging, freezing and alkalies is changed. The buffer quality of cow's milk can be brought nearer the buffer of human milk by means of hydrochloric acid or lactic acid. Many pediatricians feed lactic acid milk with the purpose of avoiding the trouble encountered in feeding sweet milk.

Gamble and Ross in their study of tetany note that "In every case the cessation of the use of hydrochloric acid or calcium chloride resulted in prompt recurrence of tetany. When

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cod-liver oil, orange and farina are added to the diet, there is no return of tetany."[13]

Hoag, of Boston, as noted, regards the hydrochloric producing substances as only temporary, but with the aid of the mercury vapor lamp he was able to raise the calcium to a normal of 9.5 mgm. in 100 c.c.[14]

Cod-liver oil and shark oil supply something which is optimal for cellular function. Cod-liver oil has the power of radiant energy. Cod-liver oil has the power of increasing the concentration of calcium and inorganic phosphorus in the blood serum. Its action is on the body as a whole and not on the intestinal tract.[15]

We see that climate and season exert a very marked influence on growth and nutrition and that diet must change with season. Malling-Hansen noted that children grow more rapidly in the spring and summer.[16]

This does not encourage us to send children far north in the summer, unless liver lipoid is given to supply the lack of radiant energy.

In February, 1924, two infants, aged ten days, were treated, one weighing four and one-half pounds was fed on whole lactic acid milk with Karo syrup. The progress was rapid. The other infant, weighing six pounds, was fed on diluted sweet milk with Karo syrup. The progress was rapid. When thirty-seven days old the infant fed on sweet milk took the food with difficulty. This infant began to have trismus, soon ten or twelve convulsions were noted daily and exophthalmus. Typical tetany was present. Calcium chloride was given, fifteen grains four times daily for three days, sweet milk was discontinued and lactic acid milk was given. The tetany soon disappeared. There was no recurrence. This is the youngest infant to have tetany I have seen.

Summary

1. In January, February and March, an infant, age ranging from five to fifteen months, feeding on cow's milk, and not up to normal nutrition, should receive cod-liver oil.

2. An infant taking hydrochloric acid producing substances for tetany should receive cod-liver oil, or electrical radiant energy, or direct sunlight (no glass intervening).

3. Alkalies should not be added to cow's milk.

4. During the low seasonal tide of calcium and phosphate intake, lactic acid milk is of valuable therapeutic aid, the buffer substances being almost the same as breast milk, leave hydrochloric acid for the metabolisms of calcium equilibrium for bone and nerve.

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REVIEW OF THE AUTOPSY SERVICE AT THE UNIVERSITY OF VIRGINIA HOSPITAL, FOR THE TERM 1923-24.*

By INDIA HUNT, M. D., University, Va.
Assistant in Pathology, University of Virginia.

The autopsy service at the University of Virginia Hospital serves a double purpose: within the hospital, the autopsy is performed to determine the cause of death, if doubtful, and to make such study of the terminal pathology present as will help to complete the clinical study of the case; this correlation we further seek to make by a review of the clinical and autopsy data at the Clinical-Pathological conference held once every two weeks. For

*Read before the Journal Club, University of Virginia, May, 1924.

teaching purposes, on the other hand, the autopsy table is the best possible means of demonstrating pathology, and is our chief source of material for gross and microscopic study of the alterations produced in the body by diseases processes.

The autopsy series presented here includes the routine hospital autopsies performed from September 1, 1923, to May 1, 1924, making a total of sixty-eight cases for approximately eight months. This is a gain in numbers over last year, in which there were forty-eight cases for the school year. Of these sixty-eight, all deaths but one occurred in the hospital, the exception being a coroner's case referred in from the outside. The autopsies were performed anywhere from forty-five minutes to four days after death, the majority being within six hours after death occurred.

The Medical Service furnished the chief source of our autopsies, thirty-three being from that service; the Surgical Service contributed twenty-one; the Pediatric Service nine; the Genito-Urinary service about three, and the Obstetrical Service one. Of the entire series, there was an equal division as to race, thirty-four being from the white, and thirty-four from the colored race. Thirty-nine were male, and twenty-nine female. As to age, there were ten cases from one to ten years of age (five being less than one year old); eight cases from ten to twenty; twelve cases from twenty to thirty; five cases from thirty to forty; seven cases from forty to fifty; eleven cases from fifty to sixty; seven cases from sixty to seventy; and eight cases scattered from seventy to one hundred.

Review by Services

Surgical Service: On the Surgical Service, peritonitis was the chief cause of death, being the terminal factor in eleven of the twenty-one autopsies from this service. In nine cases, this was general and diffuse, following a ruptured appendix in three cases, intestinal obstruction in one, perforated gastric ulcer in two, salpingitis or pelvic abscess in two, and wound necrosis in one; two cases were localized, both associated with local gangrene of the intestine.

Of the remaining ten cases on this service, four showed fairly frequent post-operative complications, an acute general septic reaction in two instances, and acute renal failure in two. There were four cases of sudden death, in which two were demonstrated to be due to circulatory blockage, one mesenteric thrombosis, and one a bilateral pulmonary embolism; a third was believed (though not proven) to be cerebral embolism; and in the fourth, the evidence pointed to a condition of status lymphaticus. Two cases of neoplasm occurred in this group; one, a large glioma of the right cerebral hemisphere, and the other a diffuse carcinosis of the abdominal cavity. Two cases of fatal gun-shot wound of the chest came to autopsy (one from the medical service). There was one case on this service in which the cause of death, presumably toxic exhaustion, could not be demonstrated anatomically.

Autopsy Series, University of Virginia Hospital, September 1, 1923-May 1, 1924.

Surgical Service—21.

Peritonitis		11
General	9	
Ruptured Appendix	3	
Intestinal Obstruction	1	
Perforated Gastric Ulcer	2	
Salpingitis	1	
Pelvic Abscess	1	
Wound Necrosis	1	
Local	2	
Local intestinal gangrene	2	
Acute septic process		2
Acute renal failure		2
Sudden death		3
Thrombosis	1	
Embolism	2*	
Status Lymphaticus	1	
Neoplasm		2
Diffuse abdominal carcinosis	1	
Glioma of brain	1	
Gunshot Wound		1

*(1 case of embolism relisted under neoplasm group).

Medical Service: On the Medical Service there were thirty-three cases. In this group, the disease-conditions most frequently encountered were tuberculosis, pneumonia, and the cardio-renal syndrome.

In the entire autopsy series, tuberculous lesions were observed in forty-one cases, or slightly more than sixty per cent. In the acute miliary form, it was the direct cause of death in four cases, two adult and two children; sixteen cases showed well-established pulmonary lesions,—tubercles, abscesses, puckered apical scars, etc.; and the remaining eighteen gave presumptive evidence of a tuberculous process by the presence of calcified lymph nodes, organized pleurisy, pleural adhesions, etc.

The records for the past winter have shown an unusually light year for pneumonia fatalities. There were only four cases at autopsy in which pneumonia was the sole or chief cause of death (two lobar and two broncho-pneumonias); and while pneumonia occurred in twenty-five cases of the entire series (or 36.7

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per cent), it was chiefly incidental to the main pathological picture, or at most one of the contributing factors. There were six lobar pneumonias, seventeen broncho-pneumonias, one interstitial, and one organizing pneumonia. These records seem to agree very well with the clinical records of the hospital, which show an unusually light winter for pneumonias and respiratory infections in general, in the wards.

Four of the deaths on the Medical Service, then, were due to pneumonia, and two to acute miliary tuberculosis. There was an additional respiratory death from edema of the lungs, in an old chronic case of extreme anthracosis and fibrosis.

The cardio-renal syndrome was fairly frequent in the medical series of autopsies. Seven cases showed this to be the chief pathological picture, the immediate terminal factor being in some cases an uremic toxemia, in others a myocardial failure. In general, the kidneys have proven to be more frequently affected by pathological change, in our series, than any other organ in the body. In all cases of toxic or septic nature, they are the first to give visible evidence of the general bodily disorder. In our series of sixty-eight cases, fifty-eight (or more than eighty-five per cent) showed pathological kidney lesions of various sorts: cloudy swelling or some other acute degenerative process being evidenced in practically all of them; a definite nephritis (acute or chronic) in thirty-two; pyogenic infections (pyonephrosis, pyelonephritis, etc.) in eleven, cysts in six, infarcts in one or two, and various minor circulatory disturbances and anomalies in others.

In three cases, the heart alone seemed the fundamental cause of death; one being an anginal and congestive failure, one a marked congestive cardiac failure, and the other a myocardial failure, accompanying general senile changes. Diseases of the blood-vessels occurred in about the usual ratio; arteriosclerosis was the most constant finding, infarct in about six cases, embolism and thrombosis also in about six, and aneurysm only in one case.

Peritonitis occurred in four cases in the medical series; two cases followed rupture in a typhoid intestine, another was associated with extensive bangrene of the intestine, and one followed puerperal sepsis.

Two cases of typhoid came to autopsy, in each of which death occurred from peritonitis following a perforation, in one, of a typhoid ulcer, and in the other, of a ruptured appendix. Five other cases of acute infectious process were autopsied; one erysipelas, one pyonephrosis, one proliferating enteritis, and two diabetics with pyemia starting from a skin lesion.

The remaining cases on the Medical Service were five in number: one extremely diffuse carcinoma of the liver, one toxic encephalitis (alcoholic), one pellagra, one second degree burn, one probable cerebral embolus (undetermined).

Neoplasms have not been numerous. There have been only two frank malignant neoplasms, mentioned above. Twelve cases of benign tumors have been noted, occurring usually as incidental pathology; of these, the fibre-myomas of the prostate and uterus were most frequent (eight), the others being an occasional lipoma, or dermoid cyst, and one gloma.

MEDICAL SERVICE—33

Tuberculosis		2
Pneumonia		4
Lobar	2	
Broncho	2	
Edema of lungs, fibrosis and anthracosis		1
Cardio-Renal Syndrome		7
Heart Failure		3
Congestive and anginal	1	
Congestive	1	
Myocardial	1	
Peritonitis		4
Typhoid perforation	2	
Gangrene intestine	1	
Puerperal sepsis	1	
Typhoid	2*	
*(Already listed under Peritonitis.)		
Acute Infectious Processes		5
Diabetic pyemia	2	
Erysipelas	1	
Pyonephrosis	1	
Proliferative enteritis	1	
Carcinoma of Liver		1
Arsphenamine Poisoning		1
Cerebral embolus		1
Toxic (alcoholic) encephalitis		1
Pellagra		1
Second Degree Burns		1
Gunshot wound		1

Obstetrical Service: The Obstetrical Service contributed only one case, of a five months' pregnancy complicated by a massive right lobar pneumonia.

Genito-Urinary Service: There were about five cases from this service of which the most interesting were cases of leukoplakial cystitis, marked pyonephrosis, and large diverticulum of the bladder (one case each); the others were chiefly cases of prostatic obstruction, before or after prostatectomy.

Pediatric Service: The Pediatric group included a series of nine cases, an unusually instructive group. The cases were as follows:

One case of asphyxia, in a still-born foetus.

One case of cerebral hemorrhage, with hemorrhage also into the lungs, and pachymeningitis.

One case of probable cerebro-spinal meningitis, complicated by pneumonia and acute nephritis.

Two cases of congenital syphilis, with persistent bleeding before death (both under three weeks of age).

Two cases of acute diffuse miliary tuberculosis, one following on old Pott's disease.

One case of extreme acute nephritis, with general anasarca.

One case of empyema, with collapse of lung, and broncho-pneumonia in the opposite lung.

PEDIATRICS SERVICE—9

Asphyxia	1
Cerebral Hemorrhage	1
C.-S. Meningitis	1
Congenital Syphilis	2
Miliary Tuberculosis	2
Acute Nephritis	1
Empyema and Pneumonia	1

OBSTETRICAL SERVICE—1

Pregnancy with lobar pneumonia	1

GENITO-URINARY SERVICE—3

Leukoplakial cystitis	1
Pyonephrosis	1
Bladder diverticulum, etc.	1

REFERRED IN FROM OUTSIDE—1

CONCLUSIONS

In conclusion, we believe (1) that the series of autopsies considered shows a fairly average parallel with that of the usual general hospital in this locality, with the exception of the figures for pneumonia, which are unusually low this year. The occurrence of syphilitic lesions also seems to have been below the average, only six being reported in the whole series, and none as the direct cause of death.

(2) The number and variety of cases studied seems satisfactory indication that the students are getting an adequate amount of material for this part of their work in Pathology, at the University of Virginia.

WHY PROFESSIONAL MEN DO NOT ADVERTISE.*

By HARRY BEAR, D. D. S., Richmond, Virginia.
Professor of Dental Jurisprudence, Ethics and Economics, Medical College of Virginia.

I am aware of the fact that I am addressing a body of men and women whose business and interests are intimately interwoven with advertising in one form or another. Indeed, advertising may be the vocation of many of you, but, being human, it sometimes becomes your avocation to come under the supervision of the medical profession. In approaching my subject, I shall limit my remarks to the profession of medicine and its allied branch dentistry.

It is interesting to note that the present attitude toward advertising by the men of these professions rests upon a tradition over 2,000 years old. It was Hippocrates, called the "Father of Medicine," who about 400 B.C. expounded certain principles as to the duties of a physician which remain today just as necessary as ever. Some of our medical colleges require their graduates to subscribe to this "Oath of Hippocrates" promulgated before the dawn of the Christian era. I shall read you its most essential parts:

> "I will follow the system of regimen which, according to my judgment, I consider for the benefit of my patients and abstain from whatever is deleterious. I will give no deadly medicine to any one if asked nor suggest any such counsel. With purity and with holiness I will pass my life and practice my art. Into whatever houses I enter I will go into them for the benefit of the sick and will abstain from every voluntary act of mischief and corruption. Whatever, in connection with my professional practice or not in connection with it, I hear or see in the life of men which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret."

The first duty so imposed requires the practitioner to consider above all else the benefit to the patient, because it is the human being itself which is the object of the service. The matter of making something and selling something takes a subordinate place. While it is true that there is a business side to dentistry and medicine, there is a professional service, the relation between the practitioner and the patient differing from that of seller and buyer. It is a trust in which the patient relies entirely upon the practitioner and entrusts his health, and not infrequently life itself, to the knowledge, skill, judgment and sincerity of the practitioner. The patient does not come as a buyer seeking to purchase something more or less specific; the patient does not know what he wants or needs.

To advertise, it seems to me, one must either have a specific commodity or a specific service to sell. A great department store can properly and justly notify the public that it has on hand merchandise of a certain kind or quality at a certain attractive price. A real estate firm must through advertising inform the public that it has for sale or rent such and such a

*Read before Richmond Advertising Club, July 16, 1924.

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house. A bank may properly tell the public of the character of its service and the facts which show its financial security. The professional man, however, in refusing to advertise, does not deny the value, the efficiency and the necessity for advertising in business. He daily relies upon this powerful medium not only in his home life but in the very essentials necessary for his professional practice. But, of what can the professional man advertise? Medicine is an inexact and vast science. For the true physician there is no one system or method for the treatment of all cases of even the same ailment. Similar ills in different types of patients present as many varied circumstances. How can he make any public announcement of general interest unless it be but mere boasting of his qualifications and accomplishments? And, even if such advertisements were proper, is the public in a position to adequately judge of these qualifications? And to boast of our past accomplishments would necessitate the disclosure of facts in violation of the confidential relationship existing between the patient and practitioner. This is a personal trust and it is so important that anything which would seek to endanger this confidence would destroy the most valuble asset.

The professional man cannot advertise, not only because the prospective patient cannot know what he wants or needs, but because the practitioner himself does not and cannot know beforehand the character of the service which he will be called upon to render. "Professional knowledge and skill imply more than mere technical knowledge and skill." The patient must not only be examined but the practitioner must be able to understand the history of the case and its future probabilities, and in the light of his experience and judgment advise and dictate what should be done.

How different is this from ordinary business dealings which presuppose transactions between parties meeting on equal terms, each able to look out for his own interest and protected by the present-day high standard of truth in advertising!

Because of the very nature of the services which I have mentioned, no guarantee of results can be given or asserted and hence this important feature of "service advertisements" is closed to the professional man. His code of ethics teaches him not to encourage false hopes by promising success where, in the nature of things, there is uncertainty. In this respect the Code of Ethics of the American Medical Association reads:

"It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients."

You will observe here that even any public announcement or news item, as well as a paid advertisment, which seeks to attract patients, is both undesirable and unethical.

In contrast to the business advertisement where the announcement of price is of compelling interest, the conscientious practitioner, by reason of the uncertainties involved, cannot publicly announce his fee for services before he even sees the patient. A price is supposed to bear some pretty definite relation to the cost of an article, taking into consideration the overhead expense and the necessary profit added. However, there must be much greater flexibility about professional fees as other elements enter into the determination of them. Of the many factors involved is the ability or the inability of the patient to pay for the service. Added to this is the skill and responsibility required for the particular case. And what of those patients who need services and cannot afford to pay for them? They, too, must be looked after. And of those who can pay it is unfair to charge the shop girl of $15 a week the same fee that you would charge the man whose income is $20,000 a year. Realizing this fact you will agree that in the matter of professional services it would be an unjust discrimination to have anything like a fixed fee.

The wisdom of professional ethics prohibiting advertisement is plainly justified as exhibited by the character of such professional advertisements as have appeared. These advertisements are usually, if not untruthful, misleading, because of the intimate nature of the subject matter involved. The practice that it represents is so often unscrupulous that professional advertising has come to be looked upon as a badge of quackery, not alone by the profession but by all observant people of a community. There is an almost universal opinion among the professions that the paid public advertisement of personal qualifications, professional ability, guarantee of service (which in the very nature of things cannot be given), and fees for service, are improper, in bad taste and not consistent with the personal

trust existing between the practitioner and the patient.

"Ethical rules are not mere fads invented by medical associations for the sake of justifying their existence but are formulations of unwritten principles of conduct which have commended themselves with the sanction of the ages as aids to the great purpose of rendering each practitioner more useful to his fellow creatures." These rules are maintained and exacted for the benefit and protection of the public.

410 *Professional Building.*

SOME ASPECTS OF VENEREAL DISEASE TREATMENT.

By S. G. GILL, A. B., M. D., Norfolk, Va.

The incidence or occurrence of venereal disease is quite large. One authority states that "Probably ten per cent of the adult male population of the United States is syphilitic, but that the percentage of syphilis among women is much lower than among men."[1] Another authority writes, "It is is highly probable that every male who indulges in promiscuous intercourse, sooner or later acquires a gonorrhea. The percentage of males so affected varies, according to different authorities and according to various countries, between fifty and one hundred per cent."[1] "Among women, gonorrhea is more severe and less common than among men. The proportion of men to women is 16 to 1. Almost one-third of the reported cases of gonorrhea occurred in married women, to whom the infection had been conveyed by their husbands."[2] "It is estimated that one-eighth of all of the diseases of women are occasioned by gonorrheal infection attacking the vagina or the cavity of the uterus and thence extending to the fallopian tubes and ovaries."[3]

Although syphilis and gonorrhea are among the most prevalent diseases to which the human body is heir to today, and although these two diseases cause so much mental, moral, physical and economical suffering, there is as yet a hesitancy, a false modesty that tends to prohibit their free discussion. It is certainly of the greatest importance that physicians should be cognizant of venereal diseases and their prophylaxis, and the treatment of these diseases, discussing them freely, else persons interested will suffer from false knowledge or secrecy.

Prophylaxis

Two forms of prophylaxis have been advised from time to time. These measures are chemical prophylaxis and sex education.

Chemical Prophylaxis

"Proper chemical prophylaxis against venereal disease should be made readily available to all who are exposed to possible infection. Syphilis and gonorrhea are morbid cancers attacking the social fabric and we are justified in using chemical prophylaxis as one of the methods in preventing venereal disease."[4] The only argument against using chemical prophylaxis in venereal disease control is the expression by some organizations that in many instances this is a method which condones and tolerates sexual promiscuity, for its use theoretically removes the fear of venereal diseases: however, all attempts at the extinction of prostitution present throughout the centuries one unbroken record of failure, and the sexual impulse, the strongest to which human nature is subject, has asserted itself. The procedure is as follows:

(1) Urination and thorough washing with soap and water of the external genitalia, lower abdomen and the inner surface of the thighs.

(2) Application to the parts of mercuric bichoride, 1-1000.

(3) Injection into the urethra of 1 to 5 c.c. solution protargol or argyrol, to be held five minutes.

(4) Smearing the penis, after drying, with calomel ointment, thirty-three per cent, and pushing a little into the meatus.

When this procedure is impracticable, washing and the use of one of the commercially prepared prophylactic packages must be depended upon.

Sex Education

Sex education, while not outwardly so apparent today, is gradually being looked upon in a more common-sense manner than in former times. The child becomes "sex conscious" in the majority of instances, at about nine years of age, and at this time it is proper that sex instruction be begun. Such information should be given by the parents, the problem being treated in a general way. The biological histories of plants and animals should be utilized, and, as a child grows, his companionship, play, sports and books should be carefully supervised. The usual sports of childhood and youth are of tremendous value in directing the sexual urge into constructive and useful channels of instruction."[4]

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Courses in mental and social hygiene should be a part of the curriculum of the High School, College and University, and of the public lecture course of the social institutions such as the Y. M. C. A., Y. W. C. A., Knights of Columbus, Women's Clubs, and similar organizations. If the veil of prudery and false modesty is eliminated from the subject of venereal disease, the public conscience will be aroused from its lethargy of indifference and unconcern.

Other methods of combating venereal disease would include the following:

(1) Religious and ethical instruction intelligently related to the avoidance of sexual contact.

(2) Protective social measures to prevent untoward results of casual acquaintanceship in public.

(3) The reporting of venereal diseases without infringement upon personal liberty.

(4) Co-operation by the clergy, by demanding evidence of a careful medical examination before marriage.

Treatment

When we come to the actual treatment of venereal diseases, there is one point which stands out pre-eminently above the others. That is the early recognition of these diseases. Syphilis and gonorrhea are singularly prone to cause tissue changes, if not treated in the early stages, and, the sooner they are recognized and treated, the more hope there is of an early recovery.

We have treated many cases at the Venereal Clinic, who in all probability contracted syphilis over twenty years ago. These individuals are for the most part physically or mentally incapacitated, or both, and are a sociological, economical and financial burden on the community, eking out a miserable penurial existence. So many of them have told me, "Yes, I had a sore, but it was several years ago and it didn't take but a few weeks to heal."

Most every physician has treated or heard of the patient with the "morning drop" of gonorrhea, who has flitted from one drug store to another, in vain attempts to probably cure some deep-seated infection with injections. I believe if acute cases of gonorrhea and syphilis could be seen and recognized early by a competent physician or specialist that, with the co-operation of the patient, the disease could in most cases be cured.

Syphilis Prophylaxis

Clinical records show that a limited number of persons treated with two half doses of arsphenamin, after the first day of exposure and before the primary symptoms have had time to appear, have never developed symptoms of syphilis.

In the treatment of syphilis, it is generally recognized and emphasized that the patient has to be treated as well as the disease. The physical condition of the patient and the toxic effect of the drugs have to be continually watched. Often times it is advisable to allow periods of rest. Particularly is this true, when there arise, during the course of treatment, dermatoses, itching, hepatic disturbances, idiosyncrasy for the drugs, or severe albuminuria. Some patients cannot tolerate as much mercury medication as others. When the kidneys become unduly irritated, the elimination of arsenic is obstructed, and further treatment may do much injury.

I have found that an important detail in arsphenamin administration is to have sharp pointed needles. This may seem a trivial matter to the physician, but it is of vast importance to the mental attitude of the patient.

It takes longer to cure syphilis than most people realize. Even in the first few weeks, before the Wassermann test becomes positive, and the diagnosis is made by the microscopic "dark field" examination of the spirocheta pallida, at least a year's treatment is necessary, with two more years of observation, before a cure can be expected. Clinical observations of primary lesions can no longer be relied upon, and repeated dark field examinations are of vast importance in establishing an early diagnosis. Although the Wassermann test is of such immense value in diagnosing syphilis after the third week of the initial sore, if the clinical symptoms point to the disease, it is wise to give adequate treatments. At times we have found a negative blood Wassermann test revert to a positive, after a few injections of neo-arsphenamin. We have commonly found patients who gave a negative blood, but a positive spinal fluid Wassermann test. It is very important to have a spinal fluid Wassermann test done before a patient is discharged as cured.

In order to have a working basis for syphilitic treatment, we administer to each patient weekly injections of arsphenamin or neo-

arsphenamin, also mercury salicylate. One course consists of eight injections of arsphenamin or neo-arsphenamin and fifteen of mercury, by all means giving two courses to each patient, regardless of the result of Wassermann tests. A Wassermann test is taken four weeks after the first course is completed and four weeks after the second course. If test is negative, another test is advised in eight weeks, then at intervals of from two to four months, one course to be given annually. If the blood Wassermann test is positive after treatment, treatment is continued, with periods of rest, according to the condition of the patient. Iodides alone, and mixed treatments, are given to secondary and tertiary cases. A spinal test is advised after the second course of treatment and, if positive, treatment is recommended.

Gonorrhea and Other Venereal Diseases

My remarks on the treatment of other venereal diseases will be brief.

Acute Anterior Gonorrhea

In the treatment of acute anterior gonorrhea, the injection of the silver salts has proved efficient. When the acute disease is limited to the anterior urethra, it is sometimes possible to effect a cure in a few weeks. If the gonorrhea is seen in the first few days, the repressive treatment is advised by Keyes, rather than the abortive treatment, because the disease is intensified if the abortive treatment fails. The repressive treatment, in brief, is for the expert and consists of the injection of acriflavine, 1-4000, argyrol, protargol or irrigations of potassium permanganate. Sounds are passed gently, increasing in size, first to bulb and then to bladder, at four day intervals, until a 28 French sound passes into bladder without any reaction. However, I do not use any particular method exclusively, and it is well to take into consideration the resistance or fastness of the gonococcus to germicides, necessitating a change, as advocated by Williamson.[5]

Chronic Anterior Gonorrhea

This can be treated by irrigations, sounds, anterior dilatation, the use of strong silver solutions, fulguration for follicles and localized lesions that harbor the gonococcus or unduly worry the patient.

Acute Posterior Gonorrhea

In acute posterior gonorrhea, rest is advised. Hot sitz baths are prescribed for an acutely enlarged prostrate and morphine suppositories for severe pain.

Chronic Posterior Gonorrhea

In chronic posterior gonorrheal urethritis, systematic vesical and prostatic massage, irrigations, the passage of sounds, Kollman's dilators and the cysto-urethroscope, and instillations of silver nitrate to the verumontanum are to be given as indicated. If a thorough examination and treatment in chronic gonorrheal urethritis is made with sounds, dilators, urethroscope and massage, many of these cases can be cured; but it is always best to make a guarded prognosis, as some of these cases may require the use of sounds, massage and irrigations for months.

Prognosis

"A gonorrhea begins and God alone knows when it will end," said Ricard, more than a generation since, and the aphorism is as true today, as the day it was uttered.

The duration of chronic urethritis is always protracted and requires great patience on the part of the physician and patient. From the experience of the leading genito-urinary specialists in this country and Europe, six months may be accepted as the average duration of the treatment of chronic gonorrhea, while in the experience of some of the reporters, about three per cent of the cases were incurable by any treatment whatever.[6]

As to the prognosis of syphilis: "It is essential that a luetic patient be kept under observation as long as he lives. It is difficult indeed to assert that a man is definitely cured. Possibly fifty years after a luetic has been treated, we may be able to make this assertion and then only, if in the meantime the patient has revealed no clinical or serological symptoms and if on autopsy no pathological lesions are revealed."[7]

This may seem an extreme and pessimistic view. Hazen states: "When a patient in the early stages of syphilis is thoroughly treated for eighteen months, and has a negative spinal fluid, the chances seem to be that he will have no further trouble, if he keeps himself under observation. He may, of course, require further treatment, but in the vast majority of instances this will be the most serious inconvenience that he will suffer."

Chancroid

Chancroid is a local lesion causing no sys-

temic infection or reaction and is caused by the streptobacillus of Ducrey. In the clinic, as a rule, chancroids outnumber true chancres two to one, for chancroid flourishes only where soap and water are not esteemed. They are treated locally by cleanliness, tincture of iodin, and cauterization.

Erosive and Gangrenous Balanitis

Erosive and gangrenous balanitis is found in men with long, phimotic, dirty foreskins. Fusiform bacilli, spirochaetes and pyogenes, especially staphylococci, are constantly found in the purulent secretions. Brams states: "Salivary contact is not an essential predisposing factor but the infection may be due to organisms which are present, as saprophytes under normal conditions, and which have the power of becoming pathogenic when suitable conditions arise." Smears and cultures were made from the prepucial secretions of one hundred normal men and in fifty-one per cent of these cases the smears contained both spirochaetes and fusiform bacilli. The treatment of this disease is comparatively simple, when it is taken into consideration that the causative organisms are anaerobic. Palliative measures, such as soaking the penis in hot water or hot sitz baths, and irrigating the prepucial sac with hydrogen peroxide and potassium permanganate, usually suffice in early cases. In the more advanced cases it is best to make a dorsal slit and thoroughly cleanse the glans and prepuce so as to expose as much surface as possible to the air. Early recognition of this disease is of vast importance, on account of its highly destructive action on the tissues.

Herpes Progenitalis

This proves intractable at times and in some cases circumcision is necessary for a cure. Astringent powders and washes are used.

Granuloma Inguinale

This disease has received a great deal of attention in the literature in the last few months. We have had a few cases at the Venereal Clinic and I have had one atypical case in my office. All were in negroes, and most of the cases were typical with raised granulomatous ulcers in the groins or perineum, or both. "Lesions about the lips, mouth and neck" have also been reported.[8] We examine smears for Donovan's organism and, whether positive or not, if the ulceration looks suspicious we administer tartar emetic intravenously; we begin with 5 c.c. of a one per cent solution in 25 c.c. of distilled water, increasing in strength every two or three days until 12 c.c. in 25 c.c. of water is given. Surgical removal and the use of the Roentgen ray locally have been used by some and it is well to take into consideration that any of these cases may relapse and need further treatment.

Case History

A young negro man appeared in my office with an ulceration on head of penis, one in the corona, and one at the meatus. I examined for Donovan's bacillus, did a "dark field" for spirochaeta pallida and had a blood Wassermann made, all being negative. There was no urethral discharge, but shreds in both urines due to a previous attack of gonorrhea. He was treated locally and in a few days the right side of the head of the penis seemed to be a mass of pus and it felt as if you could pull it off. The patient had difficulty in urinating, the meatus practically closed by the ulcer, so I did a meatotomy and tried to establish drainage by putting a scalpel in through the meatus and bringing it out the right side of the head of the penis. The patient developed anuria and he had to be catheterized for several days. Two injections of tartar emetic caused entire healing of the lesion but, in using the catheters, an acute prostatitis was caused from an old gonorrhea. This, however, readily yielded to treatment. The only drugs used at this time for the sores were bichloride of mercury washes and tartar emetic. This is an example of some of the complications met with in venereal disease treatment.

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322 *Dickson Building.*

A STUDY OF THREE HUNDRED SYPHILITICS.

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It would seem of interest, and some practical importance, to know the relativity of symptoms in syphilis, as by so doing a diagnosis could more readily be arrived at. Furthermore, this study is of interest as confirming more or less, the specificity of the Wassermann reaction in the State of Virginia, distantly removed from areas which have certain sub-tropical diseases which may give a four plus Wassermann reaction.

These cases, of which there were three hundred, had a positive Wassermann. As no clinical study was made until after the report from the laboratory, they represent the study of three hundred four plus Wassermann tests, rather than the above number of known syphilitics. It will be well to note that not one of the patients who had a positive Wassermann was clinically negative, although in our records were many clinically positive cases that were serologically negative.

In reviewing these histories I am at once struck with the fact that such a small number show symptoms characteristically syphilitic, and only by combining a group entity of vague symptoms could a diagnosis be positively made. In other words, this shows the great importance of serologic findings as an important link in the symptom-complex.

The following table shows the manifestations in order of incidence:

Manifestations	*Positive Findings*	*Per cent.*	*Plus*
1. Lymph nodes—Epitrochlear	228	76	
2. Inguinal	225	75	
3. Post cervical	207	69	
4. Headache, especially at night	163	54	"
5 Venereal sore, or scars	148	49	"
6. Joint or bone pains	123	41	"
7. Pains and stiffness in back or neck	117	39	"
8. Sore throat	106	35	"
9. Genitalia—Chancre, Condylomata	80	26	"
10. Syphilodermata	78	26	
11. Anemia	76	25	"
12. Axillary, Lymphadenitis	67	22	
13. Tender shins	53	17	"
14. Vascular System—Heart, especially aortic insufficiency and myocarditis	45	15	
15. Bones—Osteitis, Periosteitis, Perforations	43	14	
16. Mouth, Throat—Mucous patches	41	13	"
17. Hair—Alopecia	36	12	"
18. Miscarriages, still births, or infantile deaths first year in total of 100 females	26	26	
19. General appearance, especially undernourishment	20	6	"
20. Aural symptoms—Partial deafness	20	6	"
21. Gait—Spastic or ataxic	18	6	
22. Keratitis	12	4	
23. Digestive tract—Ulcer or gummata	11	3	"
24. Paralysis—general, or tabes well defined	10	3	"
25. Retinitis—Optic Atrophy	9	3	
26. Definite Psychoses	9	3	
27. Gummata cutaneous	9	3	
28. Definite liver involvement	9	3	
29. Jaundice present	6	2	
30. Iritis	6	2	
31. Choroiditis	6	2	
32. Finger nails	4	1	"
33. Respiratory tract—Gumma of nose and larynx	4	1	"
34. Lungs—Gummata	4	1	"

The question will naturally be asked why there are not a greater number of frank cases of syphilis which, as indicated, is only about twenty-five per cent. This answer to the author's mind constitutes the pre-eminent encouraging feature, that is, the public generally is alive to the fact that syphilis is a serious condition and needs early treatment, but they do as yet fail to persist in treatments until cured. Much of this information possessed by the public is due to Government and social agent activities.

The outstanding serious condition which is indicated is the involvement of the cardio-vascular system, showing about fifteen per cent.

Although no series of cases shows absolute constancy, yet we believe this report may be of some use, as indicating probabilities as to syphilitic manifestations.

Medical Arts Building.

THRUSH.

Report of an Unusual Case.

By SAMUEL NEWMAN, M. D., Danville, Virginia.

J. A., 9 years and 8 months old, presented himself for examination, July 18, 1924, with the following history:

Fifth full term, normal delivery, with average birth weight, in a family of six children. All the other children are living and well. The early development of J. A. was normal. Had whooping cough when two years old; measles when three; skin eruptions during infancy; and recurrent sore throat with occasional cervical gland involvement perhaps once during each year of life.

Present illness dates back since the child was

three years old, when he first had whitish patches on tongue and other parts of mouth. This condition caused a very sore mouth. It always came on during the months of January or February and after treatment it would partially disappear only to come back about the same time in the following year. This year the child had been suffering more severely from this condition. For the first time he had been troubled with a sore mouth also during the summer.

Parents of child are educated and sought relief since trouble first appeared. A diagnosis of stomatitis had been made in this case, without designating the underlying cause.

Examination showed a bright looking, very nervous and undernourished boy—ten per cent underweight for height in accordance with the Baldwin-Wood table. The boy presented the fatigue posture, winged scapulae, and enlarged and painful anterior cervical glands and left posterior cervical glands.

The child was spitting continuously, saliva dribbling from his mouth. The voice was muffled and indistinct. Temperature under axilla was 101. Examination of the mouth showed a cream colored gelatinous membrane covering the right two-thirds of the tongue, several areas on the hard palate, irregular spots on the inside of the cheeks, and the whole of the soft palate. The uvula looked ulcerated and bleeding. The tonsils were covered with a grayish dirty diphtheroid membrane, and the throat was filled with glary mucous. The part of the tongue not covered with this membrane looked very red and bathed in sanguinous fluid.

Examination of urine showed a trace of albumin. Examination by a dentist did not reveal any carious teeth or a gingivitis. A direct smear from the mouth showed various cocci and bacilli and the predominance of Oidium albicans (conidia and mycelia). Organisms of Vincent's angina were absent. Cultures showed a growth of staphylococcus albus.

The treatment consisted in a daily application of a ten per cent suspension of sulpharsphenamin in glycerin for three days; boric acid mouth wash; and quantitative nutrition. On July 26th, one week after the first visit, the child went home with a gain in weight of four and one-half pounds, the throat and mouth perfectly clean, and with only one patch on the tongue about the size of a nickel. August 2nd, seventeen days after first visit, child reported again. Mouth and throat were perfectly clean. Tonsils and pillars reddened, but no deposits of any kind. Cervical glands palpable, but not painful.

Comment

There are several points in connection with this case that make it rather unusual and worthwhile reporting.

A. *Age of the child.*—While thrush is a common disease of infancy it is rarely seen in children. Finkelstein[1] states, "Thrush is a characteristic disease of infancy; in older children it appears very seldom, and then only as an accompaniment of severe cachectic conditions, as in the case of the adult." Stockton[2] says, "Thrush seldom, if ever, appears in healthy individuals. In infancy trivial disorders may prepare the way, while in older children pneumonia, typhoid fever, and the exanthemata are the predisposing causes."

B. *Predisposing cause.*—The organism of thrush (Oidium albicans) is a *nosoparasite*, that is, it never produces disease by itself. The ground must always be prepared for it by a stomatitis, from whatever cause, or by a cachectic condition. In older children the cachetic condition must be truly grave in order to allow the implantation of thrush. In the examination of thousands of malnourished and tubercular children in Eastern and Central Europe we did not see a single case of thrush. In an analysis of the records of physical examination of 12,000 war orphans by trained pediatrists, not a single case of thrush is recorded.

Fischl[3] states that Moro reported a case of primary implantation of thrush on the tonsils of a child and described it as a case of soordiphtheroid (soor, German for thrush). Fischl states that he has also seen several cases of primary implantation of thrush on the tonsils.

In our case the undernourished condition of the child cannot be considered as a satisfactory predisposing cause to the persistence of such a severe case of thrush. It is noteworthy that the child did not begin to suffer from it before he reached the age of three. The probabilities are that we had to deal here with a case of primary implantation of thrush on the tonsils, from which it spread to other parts of the mouth.

The clearing up of the condition is attributed more to the quantitative nutrition rather than to the local measures.

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Arcade Building.

RADIUM, X-RAY AND SURGERY.

By SAMUEL ORR BLACK. A. B., M. D., F. A. C. S.,
and
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That radium has wonderful therapeutic properties is now accepted by all.

There are many cases in which it acts almost as a specific. Many lesions when subjected to its action disappear as if by magic. Oftentimes, it alone is all that is needed to remove a malignant sore; again, it must be used in conjunction with surgery or X-ray.

Around the eyelids or on the face we use radium almost exclusively. For carcinoma of the jaw, we first cauterize and then insert a radium pack. The combined treatment here surpasses either when used alone. There are other localities in which we use it in conjunction with surgery or with the X-ray, or with both, for example, carcinoma of the breast and carcinoma of the cervix.

For superficial lesions around the eyelid, on the nose, on the face, or in the temporal regions, we usually apply 50 mg. of radium in a brass capsule or lead screen for from three to six hours at a time. This dose is repeated from the fourth to sixth day for three or four applications, depending upon the age of the patient and the extent of the lesion itself. In the great majority of lesions such as these, this treatment suffices. For two to three months these cases are re-examined, and, if deemed advisable, further radiation is given. In lesions of this sort we have practically discontinued surgery as the radium results are extremely satisfactory.

Tumors of the parotid gland are treated by burying radium needles in the substance of the tumor itself. At alternate periods deep X-ray therapy is given. The radium needles are buried once weekly, and three days later the tumor is again exposed to radium by applying 100 mg. needle over each half for period of four hours, with one-half inch wooden block intervening between skin and radium. Once every two weeks while this is taking place, the area is treated for twenty minutes with Roentgen ray, nine inch gap, ½ m.m. copper filter and sole leather, twelve inches skin distance for three to four doses. With such a technique we have caused a definite and in two cases very marked diminution in the size of the mass. In no case have we succeeded in eradicating it. After this initial treatment we then treat them symptomatically and at intervals sufficiently to keep their size the same, or as nearly so as possible.

In treating malignant jaws we extract the adjacent tooth, or teeth, under general anaesthesia, and cauterize the entire area most thoroughly with an old fashioned soldering iron. A radium pack of 75 to 150 mg. of the radium salt is then inserted for a period of eight to fourteen hours and repeated once every four to six days for three or four treatments. In addition, X-ray exposures to the neck are made subsequently. We do not do block dissections as frequently as formerly.

Carcinoma of the tongue is very resistant to radium, as it is to other forms of treatment. Fortunately, however, it is easily preventable, and ere very long should be a surgical curiosity. Capillary tubes containing minute quantities of radium emanation buried and left in the substance of the cancer itself perhaps give as good results as any other form of treatment.

At present, we are treating breast carcinoma by surgery combined with radium, and followed by X-ray.

We have not found that X-ray, previous to the operation, has been of any decided benefit. On the other hand, we have thought that it produced exaggerated oozing and loss of blood.

Prior to closing the wound, we apply 100 mg. radium in brass capsule contained in end of rubber tube into axilla and leave *in situ* for twelve hours. We then pull the tube outwards for a distance of two inches and leave again for twelve hours, following which the radium is removed from the wound.

Seven to ten days after the operative wound has thoroughly healed we begin X-ray treatment. This consists of 135 Peak kilovolts, 6 m.m. aluminum, sixteen inches skin distance for forty-five minutes for the first and forty minutes for the other treatments.

The chest wall is divided into eight areas and two areas are treated daily, unless nausea

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necessitates alternating days, until all eight areas have been subjected to the rays.

Within three weeks this series is repeated and at the end of a second similar period it is again given. As a rule, this suffices; but should a localized recurrence take place, we extirpate it at once. We have seen one case operated upon for localized recurrence five times, over a period of several years.

There is perhaps no other place in the entire body where a carcinoma so far advanced can be retarded in its destructive process so quickly by radium as cancer of the cervix. We have practically discontinued the use of surgery for carcinoma of the cervix and now use radium, supplemented by the roentgen ray.

As a general rule, a 100 mg. capsule of radium is placed against the cervix, or else radium needles are inserted into the substance of the lesion and left for from ten to fourteen hours. This dose is repeated every four days for three to four treatments. After two months another series is given if deemed necessary.

Between the first and second treatments, however, we give an X-ray exposure, e. g. 5 M. A., nine and one-half inch spark gap, 6 m.m. aluminum, for twenty minutes over the sacral region. This tends to check the loss of blood very quickly.

The Roentgen treatment is continued once weekly for three to four treatments, depending upon the condition of the patient, the extent of the lesion, the degree of anemia, and the severity of the reaction manifested by the patient. Frequently the X-ray, when given in such dosage, causes a definite nausea followed at times by vomiting, but radium rarely produces such a reaction.

In the same way that some people blister more easily under the sun's rays, some people react more severely to the rays of radium and the Roentgen ray. Each individual, therefore, necessitates very careful dosing, and this holds true no matter where the lesion. It is wise to explain thoroughly and candidly that each treatment might possibly burn or blister, but that if it does the chance is better of more permanently destroying the lesion. Of the last fifty-five consecutive cervical cancers treated as outlined above, we have secured at least a marked temporary benefit.

We have never seen a case of cancer of the cervix, excepting a few moribund ones, where the symptoms have not been lessened for a time at least. The hemorrhage ceases, the pain and discharge lessen, douches keep the parts clean, the odor disappears, and the patient feels generally improved. In such a case when death does occur, it is often from a metastatic lesion deeply placed and not from the local lesion in the uterus itself.

Though radium is not an absolute cure for cancer, yet it does have a field of distinct usefulness, and when intelligently used it can be of immeasurable benefit to many patients, either alone or in conjunction with surgery or X-ray.

This is given as a fairly accurate account of the way in which certain types of cancer are being treated at the present time in the Mary Black Clinic.

362 *East Main Street.*

CHRONIC CONFUSIONAL STATES SIMULATING DEMENTIA PRAECOX. DIFFERENTIAL DIAGNOSIS.

By ALFRED GORDON, M. D., Philadelphia, Pa.

The problem of dementia praecox is still a matter of considerable hesitation and diagnostic difficulty in a number of instances. The presence of certain symptoms which are encountered in other mental affections, and especially their persistence, render the diagnosis and consequently the prognosis quite uncertain and embarrassing. Among the psychoses with which dementia praecox may be confounded, confusional states of long duration are particularly liable to mislead. Literature is abundant with examples which were fomerly described as cases of confusional insanity, but which were proven to be genuine examples of dementia in accordance with Kraepelin's conception. We also meet with examples labeled as cases of dementia praecox, but which present all the elements of a chronic confusional condition and which eventually make a complete recovery.

Within the last several years the writer had the opportunity of studying seven such cases and of keeping them under his uninterrupted observation. Before discussing the differential diagnosis, the salient features of each of the cases are presented here for consideration.

Case I.—M. S., female, 30 years old, during convalescence from attack of acute lobar pneumonia of an unusually severe character and of long duration, suddenly commenced to show slight disorientation in time. Soon a state of agitation set in. Delusive ideas of a mild per-

secutory character directed towards her relatives made their appearance. With the exception of occasional auditory hallucinations, the above condition remained unaltered for a period of three months. Gradually the psychotic symptoms became more and more intense and delusions of the paranoid type came into evidence. Curiously enough, the delusive ideas would at times be totally absent; at other times *a propos* of the least excitement they would reappear. During that period the disorientation remained and amnesia became prominent. At times she would forget facts which occurred only two or three hours previously. However, questioned on the same subject at another time, the amnesia would not be present. The patient was largely confused. Each question propounded to her would arouse astonishment and surprise. Sometimes she would become resistive in talking, and acting. On two occasions she became catatonic, and each catatonic state lasted from three to eleven days. Throughout her entire mental illness, which lasted six months, the confusional state and the disorientation never totally disappeared, but all other penomena were episodic in character: they would disappear and reappear. Eventually the patient made a complete recovery.

Case II.—A. S., male, 23 years of age, recovered from an attack of typhoid fever. While he was convaleseing, a mild delirious state developed. After that he gradually became more and more confused and amnesic. His attentive faculty became defective; when spoken to, he behaved as if he did not understand what was said, but as if he were absorbed in some other subject foreign to the question asked. At times he would make a reply in a very irrelevant manner. When reminded of the absurdity of the situation, he would make efforts to correct himself and occasionally succeeded. When asked to carry out an act, he would at times do something else and at others he would endeavor to execute it correctly, but only when urged, constantly reminded and encouraged. This psychotic state continued with great variations in intensity during a period of four months. He soon became apathetic and indolent. At that time he developed a stuporous state in which he became totally mute. He had to be fed; he could not take care of himself. The stupor lasted only ten days, after which period the former confusional and disoriented states returned in their totality. This mental condition fluctuated in its intensity. The patient soon developed a short period of automatism, which became substituted by an equally brief period of negativism. During the following two months he showed at different times hostile reactions with regard to his parents, but they were all of brief duration. During the entire illness, which lasted thirteen months, the clinical picture suggested strongly the diagnosis of dementia praecox, but the outstanding feature concerning the shortness of the superimposed manifestations, also the variability in the intensity of the basic elements of his affection, namely the incoherence and confusion, made me hesitate in accepting the definite view of Kraepelin's disease. Further events justified this cautious attitude. Complete recovery followed.

Case III.—D. T., female, 26 years of age, primipara, had a very difficult and protracted labor. She was confined to bed eight weeks in a state of extreme exhaustion. Rapidly she began to show signs of incoherence in speaking, of disorientation in time and of a mild confusion. For weeks she remained in the same mental state, with the exception of an occasional hallucinatory attack. She soon became much agitated, could not sleep, would talk to herself, could not take care of herself, became extremely inattentive to her sphincters. All these symptoms varied in their intensity and frequency. Some days the confusion and agitation would be extreme, other days extremely mild, so that the patient could carry out orders. There was also a certain amount of amnesia which, like the rest, was variable and ran parallel with the confusional state. The patient soon became negativistic: she refused to answer questions, to execute the simplest acts. Her attitude became stereotyped in every direction. Her indifference to surroundings became more and more marked. The negativism and stereotypy disappeared at the end of ten days. Apathy and indolence became pronounced. The confusion, lack of attention remained as formerly. The picture of the disease was so far that of hebephrenia with this difference, however, that with the exception of the confusional state all other symptoms were of a transient character. The diagnosis was hesitating for many weeks and months. The patient made a complete recovery at the end of 18 months.

Case IV.—K. J., female, single, 23 years

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old, after a prolonged period of preparation for a college entrance, in which she failed, developed a mild confusional state. Insomnia, slight agitation, with an impatient attitude towards her sisters, were also present. Gradually all these symptoms became more and more pronounced. Soon vague persecutory ideas made their appearance. She became very incoherent, listless and apathetic. Catatonic manifestations at one time, stereotyped behavior later followed. All these symptoms were not continuous. They would appear, disappear and reappear. Their intensity also varied in each attack. At times they would be very brief (only of a few hours' duration), at others quite prolonged (of several days' duration). While this fluctuation was in evidence, the confusional element remained present through the entire course of the psychosis. Self-criticism was lacking, the speech was absurd, although at times her replies to questions were correct. She always preserved her astonished, surprised and perplexed expression of the face. The defective attentive power, the defective orientation and adaptation were predominating in spite of the superimposed transient hebephrenic incidents. At the time when the latter were present, the clinical picture was strongly in favor of dementia praecox. The patient made a complete recovery.

Case V.—J. L., male, 27 years years old, after vain search for work, finally obtained a position in a leather factory where he was compelled to do heavy physical labor. Being unaccumstomed to such work he soon began to feel unusual fatigue at the end of the day. For several weeks he tried to hold on to the position, but finally he commenced to feel the effects of it. Insomnia, asthenia, agitation, impatience and irritability made their appearance first. He had to go to bed. He soon became apathetic and incoherent. He would talk to himself in the most unintelligible manner. He became confused, presented the characteristic want of attentive power. The memory became defective especially for recent events. There was poverty of judgment and of criticism. Hostility and aggressiveness would be present occasionally, but only for a few hours at the time. On many occasions he showed a negativistic and resistive attitude: refused to answer or to carry out the simplest order. At times his behavior was stereotyped. He also masturbated violently. It is to be noted, however, that all these psychotic manifestations through the entire course of the disease which lasted three years were only episodic and their duration ranged from a few hours to seven days as maximum. The disorientation, confusion and the defective attentive power were never absent at any time. However, there were considerable fluctuation and variability in their intensity, but their conspicuousness was predominant. Complete recovery followed.

Case VI.—M. S., female, 21 years old, hemophilic, had frequent hematemesis and epistaxis during a period of three years. The last hemorrhage was exceptionally profuse. Thromboplastin was used intramuscularly. On the day following the arrest of the hemorrhage, she became restless, anxious, and a few days later disoriented and confused. Her memory became faulty. She was depressed and often found in tears. Soon she became delusive, claiming she was magnetized by her older sister towards whom she became very hostile. The enmity was based on the assumption that the sister was more favored by the parents than she. On one occasion she attacked her sister with unusual violence. After this episode her attitude changed. She became unusually quiet and more confused than heretofore. She then became negativistic and resistive. When spoken to, not one word could be obtained from her; but when not addressed she would speak to herself, although unintelligibly. She sat in one place of the room, had her head wrapped up with a muffler and ran away when she was approached. On two occasions she was catatonic during six to eight days. Stereotyped behavior also occurred on several occasions. At that period of her affliction the former delusive ideas had totally disappeared. The above symptoms, characteristic of dementia praecox, were all transient although some of them lasted sufficiently long to warrant this diagnosis. The further development of events proved that they were only episodic, but the fundamental basic condition was confusion with all its special features. It varied in its intensity and degree. Nevertheless it was persistent and characteristic throughout the entire course which lasted two and a half years. Recovery was complete.

Case VII.—R. S., male, 24 years of age, while recovering from a protracted bronchopneumonia, for which he was bedridden fifty-two days, commenced to show signs of incoherent speech and mild confusion with disorientation. Towards evening he would be

slightly delirious. His sleep was poor. He was restless the largest part of twenty-four hours. Amnesia was marked. Illusions of identity became quite conspicuous: he would frequently not recognize his parents and sisters and would see in strangers his relatives. Soon the agitation and restlessness became replaced by depression. On two occasions during this phase he had two periods of a stuporous state each lasting several days. Two months later he developed negativism and automatism. This episode lasted five weeks. After an interval of two months during which the former confusional state with its typical features was present, he developed a catatonic condition which lasted six days. The diagnosis was strongly in favor of dementia praecox during the phases of dementia-episodes, but their ephemeral character, their appearance and disappearance, their brief duration, finally the persistence of the confusion, of weakness of the attentive power, the mode of reaction to external stimuli, and the characteristic unsystematized, intellectual functions, the nature of the onset and termination of the affection, all these features led to the diagnosis of a chronic confusional psychosis. The disease lasted two years and the recovery was complete.

The course of events as they occurred in the present series demonstrate the fact that at least in some cases only a prolonged observation and a close scrutiny of the psychotic manifestations, especially their intensity, their depth, their relation to the patient's behavior, also, more particularly, the disproportion between the disturbances in the affective and intellectual spheres—all these characteristics will enable one to make a differential diagnosis.

Through the largest period of the course of the psychotic states their resemblance to those of dementia praecox was, grossly speaking, so in evidence that, in the eyes of several psychiatrists who happened to examine some of the cases once or twice, the diagnosis of Kraepelin's disease appeared beyond any doubt, and as such a most unfavorable prognosis was given. In all such cases the duration of the disorder should especially be taken into consideration and an opinion thus formed.

Let us see now what those special features are that led to erroneous diagnoses. Also let us consider the distinguishing characteristics that may on first thought be referred to either of the affections under discussion.

One of the most striking manifestations in all the cases was the reaction of the patients to external stimuli, especially when questions were put to them: either no reply at all was obtained (mutism), or else the reply was irrelevant and had no relation whatsoever to the subject of interrogation. Sometimes the patients kept on conversing with themselves as if continuing the discussion of subjects which they commenced sometime ago. Some of the patients had facial expression as of perplexity, surprise, astonishment, as if they understood the questions poorly.

It is evident that their attention is laborious. They apparently try to understand the words spoken; and whatever they may say is spoken slowly and hesitatingly. They sometimes lose all notion of time and space. They are disoriented in every direction, in some instances to the extent of forgetting their own names (auto-psychic disorientation of Wernicke). Such an attitude on the part of the patients was noticed not only in the early phases of their psychotic states, but throughout the entire course of their affection. If one compares them in this particular respect with praecox patients, the difference is striking. The latter will respond to stimulation or to questions, although they show at the same time a more or less considerable amount of incoherence. The praecox patient listens and replies in accordance with the slight means at his command. In confusional states the patient's attentive power is extremely weak, the outer world is closed to him. Because his horizon is extremely narrow, he is absorbed in contemplation of his own disturbances. As to ideas and thoughts, they arise and make their appearance in dementia praecox, either in response to the will of the patient himslf or to that of another person; but in confusional states there is no such relationship.

The praecox individuals present a striking characteristic of their mnemonic faculties in that their amnesia is progressive and extends from recent to the most remote events. In confusional psychosis the amnesia is not progressive, but variable. An examination in this respect on different days will reveal the fact that in confusion certain facts will be recalled by the patient and they will be correct in all the essentials. In praecox the loss of memory is definite and final: the amnesia is global.

In carrying out an order or a command the praecox will obediently make an attempt, but his work will be defective. In confusion, on

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the contrary, the execution of the order will be correct, but the patient must be constantly reminded and encouraged during the progress of his attempts.

The fundamental mental basis, although variable and changeable, is nevertheless normal in confusion, but the defect lies in the mode of its functionating because the latter is very slow. In dementia praecox the intellectual basic condition is very poor and even if its functionating is practically normal, the results are bad, because a praecox has a global amnesia.

The onset of the mental disorder is also different in each of the two affections. A confusional state usually commences more or less abruptly, its course is rapid, agitation is present and the termination is usually favorable. A praecox commences his or her disorder slowly and continues as a rule the slow progress; otherwise speaking his affection is chronic from the very beginning; there is no agitation and the termination is unfavorable.

The cases described above tend to prove that in all cases the differential diagnosis is not easy or clear cut. In many instances the distinction is most delicate. Should confusion present some slight features of dementia, how can one determine which of the symptoms belong to one or to the other, especially in view of the fact that the dement presents sometimes confusional episodic manifestations? Moreover, a confusional state runs sometimes a progressive course towards dementia. How then to ascertain the degree of transitory suspension of mental operations and the degree of a threatening final suspension?

The patients of the present study all presented some of the symptoms of praecox individuals, but in a very mild degree, although sufficiently conspicuous to suspect dementia. Those symptoms consisted of incoherence, of poverty of judgment, of deficiency in recalling events, of absence of self-criticism, the presence of mental enfeeblement, the presence of catatonic manifestations. With the exception of the latter all the other symptoms, on the other hand, presented considerable variability, changing in intensity every few days, and sometimes every other day. As to catatonia, which at one time Kraepelin viewed as characteristic exclusively of dementia praecox, it is met with in many other affections, especially in confusional psychosis. But what was particularly striking in the cases of our series was the persistent disorientation which was highly conspicuous through the entire course of the patient's condition. The apparent enfeeblement of intellect is only transient (what justified some authors to call it acute dementia). Although it may become chronic, it does not change its special characteristics. In dementia praecox there is practically speaking, no diminution of intellectual power for a long period of time. In confusion there is only torpitude, but in dementia praecox there is inertia.

Should a praecox develop a confusional state, which sometimes may occur, the diagnostic difficulties will increase. We find there the fundamental characteristics of dementia, namely, a marked diminution of the field of cerebration, definite and stable feebleness of judgment, persistent amnesia, total absence of power of criticism, and, especially, persistence of totality of all these symptoms. To them is added disorientation and unusually apathetic attitude, but while the superimposed disorder presents the characteristic variability of confusion, the former show persistence and total lack of variability. Two cases of our series showed an unusual resemblance to hebephrenia with the characteristic stereotypy in many directions of the latter. They nevertheless ended in complete recovery. They commenced with confusional states following attacks of typhoid fever.

The mixed cases of course present considerable difficulty in many instances, but repeated examinations and prolonged observation are indispensable for their proper discrimination and appreciation. In all such cases one may bear in mind also the following differentiating peculiarities:

A confusional individual may after persistent efforts correct his attitude of surprise or astonishment. If he is not in a state of agitation he looks very ill and is usually bedridden. A praecox has not such an appearance. When the confusional element is intense and there is also a stuporous state, the mental energies are in a state of suspension. This is the so-called acute dementia referred to above. The difficulty of differentiating it from dementia praecox may be considerable, especially since the physical signs usually present are observed in both affections.

The same remarks may be made concerning a confusional state associated with delusional features. In almost every instance a careful

search will reveal the incoherent and confusional impress in the delusional conceptions. Sometimes confusion assumes an agitated form; the words uttered by the patient and the sentences are void of all meaning when put together; the patient's gestures are equally incoherent; he is restless and impulsive. In all such cases the diagnosis from dementia praecox may be difficult. But again the entire history of a case must be taken into consideration and each individual symptom must be analyzed and scrutinized repeatedly and for a prolonged period of time.

The presence or absence of fever, of albuminuria, the course and the etiological data will frequently assist in elucidating the diagnosis of the two affections. In the anamnesis of the cases of the present study we find infectious processes at the conclusion of which the confusional state developed. We find here also instances of confusion following protracted labor, hemorrhages, excessive and uninterrupted mental or physical effort lasting a long period of time. All such cases could be classified as examples of primary mental confusion or exhaustion psychosis, running a chronic course.

To sum up the essential features of the two psychoses studied and observed for a prolonged period on the series of cases of the present essay, the following differential points should be emphasized: First of all, what is frequently considered dementia praecox because of the impossibility of the individual to judge correctly and because of defective memory, and automatic attitudes, all of which make one suspect a profound and incurable invasion of mental faculties—is often only a confusional psychosis.

The speech in both cases is absurd to the same extent, but the difference lies in the fact that ordinarily the confusional is sometimes capable to give correct answers, but not so is the case of the praecox. The essential characteristic in dementia praecox lies primarily in a profound invasion of feelings, of emotions, of tendencies even in their most superficial relationship. The incoherence which is evident in the affectivity may even lead to its total suspension. There is, so to speak, a discord in the affect, which later on is gradually substituted by a continuous apathetic state. In this phase of the affection the attentive faculty which at first was irregular and capricious, gradually disappears and a total loss of interest takes its place. As to the intellectual functions there is a distinct deficit, especially in requirements of a high order, such as generalization, etc., and there is a deficit in the mutual relationship between the intellectual and affective functions. In confusional psychosis the disorder lies chiefly in the attentive faculty, in addition to the unsystematized intellectual functions. A state of defective adaptation, orientation and determination is predominant in this affection.

In order to arrive at a positive diagnostic opinion, in order to estimate correctly the mental status of a confusional or of a praecox individual, one must determine the degree of the power of appreciation of their own condition and of that of the surrounding. One must also investigate the causes which brought about the lack of power of appreciation, or of self-criticism. Finally the degree and the genuineness of the intellectual deficit should not be overlooked.

1812 *Spruce Street.*

HODGKIN'S DISEASE—REPORT OF A CASE.*

By A. A. WILSON, B. A., M. D., Oxford, N. C.

Despite a volume of literature and much profound research on the subject ever since the publication, in 1832, of a paper by Hodgkin himself, "On Some Morbid Appearances of the Absorbent Glands and the Spleen," only a fragmentary definition of Hodgkin's disease is possible at the present time. And if we are to get any clear understanding of the disease, a survey of its history must be made. Such a survey is valuable and instructive because of the light it throws upon a complicated field of generalized lymph-node enlargements.

In his original paper Hodgkin described seven cases, but in the light of our present knowledge of lymphadenopathies, it is very doubtful whether or not a majority of these cases were clinically similar but histologically dis-similar from the generally accepted present conception of the disease. Virchow, in 1845, separated from the large group of lymphadenopathies, one with characteristic changes in the blood—lymphatic leukemia.

Many synonymous terms soon sprang up and each author coined a term to fit his variation from the generalized field of the disease. We still have a multiplicity of synonyms which

*Read at a meeting of Granville County Medical Society at Brantwood Hospital, Oxford, N. C., March 2, 1924.

are ill-defined often and very confusing, such as a "psuedo-leukemia" of Cohnheim, Bilroth's "malignant lymphoma," Langhan's "malignant lymphosarcoma," the "recurrent glandular fever" of Pel-Ebstein and Strumpell's "splenic anemia," etc.

Intensive histopathological studies have been made and the consensus of opinion labels it "an infectious granuloma due to a specific organism." A great many organisms of various types, at one time or another, have been regarded as specific mycotic agents, but no one organism has been uniformly found, none to fulfil Koch's postulates—so it would seem that the many organisms, such as Bacillus Hodgkinis, B. Subtilis, the spirochaeta, the Diphtheroid Bacilli, and others which have been found associated, may be regarded as secondary invaders, having found a favorable soil for growth, since immunological reactions have failed to confirm the specificity of the organism. So we are as far from the solution of the problem as we were before the bacteriological era.

Young adult and middle aged men, of robust constitution, whether rich or poor, seem more predisposed to the disease than women in the ratio of three to one. The disease is found sporadically all over the world, and heredity seems to play no part.

Clinically, the majority of cases run a typical course, characterized by a slow, painless, progressive enlargement of the lymphatic nodes of the body, beginning with those of the cervical chain, which seems to lend much support to the theory that the disease begins from an infectious origin—teeth or tonsils. The generally symptomless period of the early lymph-node hyperplasia gradually goes over into a second phase, during which the adenopathy becomes more or less universal, other organs, spleen, liver, etc., become involved and anemia and cachexia supervene. However, all cases do not run true to form, for one sees cases where the onset is stormy, with a rapid involvement of the other nodes plus the ordinary late general manifestations. In other cases there is, from the first, a more or less general lymphatic hyperplasia, or pressure symptoms from deeper glandular structures may come first.

The course is variable, depending on the virulence of the infection, and, in part, upon the resistance of the individual. From a little less than a year to a litttle more than a year may be called the average duration. Where pressure phenomena predominate, the course is different, depending on the structures encroached upon. After the primary nodes become enlarged, the progress to the other nodes is more or less orderly and progressive—but may be stormy and disorderly to other groups, corresponding to no rule of lymphatic metastasis. In the generalized stage, irregular fever is usually present, due to the infection or its toxins. Diarrhoea, pruritus and pigmentation of skin are commonly found.

The hematological picture of Hodgkin's disease is fairly uniform. The red cells are usually reduced in number—from 2 to 4,000,000 per cu. mm. with the hemoglobin reduced proportionately. In other words, the anemia is always of a secondary type. The total leucocyte count may be subnormal, normal or slightly increased, perhaps to 25,000 per cu. mm. with a more or less normal differential count. An eosinophilia is of some diagnostic import. The final and, in some cases, the only diagnostic criterion is the microscopical examination of the excised lymph-node.

The field of differential diagnosis is a wide one at first glance, and one must consider three phases of study. First, the granulomatous (syphilis and tuberculosis) the leukemic (myelogenous and lymphatic), the malignant—which exhibit local or generalized lymphadenopathies, with splenic tumor, progressive anemia and cachexia and which together form that large group of lymphomatoses from which Hodgkin's disease has finally been separated. Second, those diseases which simulate the various specially localized forms of Hodgkin's disease—such as typhoidal, mediastinal, osteoperiosteal, etc. Third, a few other conditions which, by reason of their recurrent or remittent febrile types, suggest endocarditis, malaria, etc. The field is greatly reduced, however, when one pays careful attention to the patient's history, both past and present, together with careful physical and laboratory examinations. The Wassermann should be made. The total leucocyte count together with a study of the stained smear to eliminate lymphoid and myelogenous leukemia, and, perhaps, a frozen section from the excised lymph gland will be necessary.

As to treatment—the hope of a permanent cure of Hodgkin's disease is practically nil, but there is a well-defined therapeutic regime, consisting essentially of arsenic, X-ray and radium and the employment of symptomatic

measures as indicated. Of all the arsenicals which have been employed, none surpasses Fowler's Solution in efficacy of treatment. X-ray and radium usually produce a prompt diminution in the size, or even a disappearance of the glandular enlargement. It is likely to be followed from time to time by recurrences, but the patient's life is lengthened and made more comfortable by their employment. A permanent cure is unlikely, however, because it is impossible to inhibit permanently the formation of new lymphoid tissue, or to destroy absolutely the active granulation tissue of the disease itself without injury to the normal structures. Surgical intervention is not only useless, but is harmful.

The case which I wish to present is, I am quite sure, more or less familiar to you all:

Mr. J. A. H., white, married, 72 years old, native North Carolinian, was first seen September 5, 1923. His chief complaint, aside from the appearances of the unsightly enlargements on sides of his neck and some mechanical discomfort and limitation of movements of head, was a slight weakness which had come upon him gradually in the last few weeks, making him unable now to do his light farm work which he had previously been able to do without this weakness.

Family history was uneventful. Mother lived to be 70 years old. Father died, age 45, of smallpox. No history of similar glandular enlargements, cancer, tuberculosis, diabetes, gout or serious mental or nervous disorders in family. Past history is excellent with no symptoms of any significance referable to cardio-respiratory, gastro-intestinal, genito-urinary or central nervous systems.

Patient's present illness began 13 months ago, at which time he noticed a small "bump," as he expressed it, in left side of neck, which he attributed to an adenitis resulting from some bad tooth or teeth. The lump, he stated, was hard, freely movable, and not tender. He went to a dentist who, after X-ray, pronounced his teeth on that side good. The nodule continued to grow, gradually spreading, until soon several were noted on that side; and about 3 months later, similar enlargements were noticed on the other side of neck; and a few months later still, hard, freely movable and non-painful enlargements were noted in the axillae, groin, popliteal spaces, etc. The growth was rather rapid and generalized.

It was at this stage that patient sought advice. Physical examination revealed a much younger looking man than he really was. He had a generalized glandular enlargement. The nodules on the sides of the neck could be seen from across the street. Everywhere glandular structures could be palpated—hard, movable, non-painful. The largest glands were in left axilla, about the size of a lemon. The spleen and liver could not be palpated. The skin was bronzed and very dry, with many irregularly shaped, more or less oval, perfectly white splotches, distributed over back, abdomen and chest.

Laboratory Findings:—Wassermann, negative; blood pressure 145/80. Urine showed a trace of albumen and rare, plain hyaline casts. Blood picture: Hemoglobin sixty per cent (Sahli), red blood corpuscles 3,630,000 per cu. mm.; leucocytes 8,600, of which forty-six per cent were polymorphonuclears, fifty-one per cent lymphocytes, two per cent large mononuclear leucocytes, one per cent eosinophiles. There was a moderately severe achromia. No variations in size or shape of red cells, no nucleated reds and no malarial parasites were seen.

Patient was referred to Dr. A. L. Gray for X-ray treatment and Dr. Vander Hoof for clinic at the Medical College of Virginia. X-ray failed to show any mediastinal involvement.

Treatment: Patient was given (on successive days in first week in October by Dr. Tabb) massive doses of X-ray, over eleven different sites. These were repeated second week in November, and again early in January. During treatment leucocyte count reached its high water mark of 18,000.

From the very first the improvement was marked and rapid, and at this date the patient's appearances are perfectly normal to inspection and he states that he feels stronger than at any time in recent years. Pea-like glands are palpable in cervical regions now. His largest gland, in left axilla, formerly the size of a lemon, now appears to be the size of a medium-sized pecan. In many other regions they are not palpable. The trace of albumen has disappeared from the urine. No casts are now seen. Hemoglobin seventy per cent (Sahli), red blood corpuscles 4,700,000 cu. mm., white blood corpuscles 8,000, and differential count is now normal.

While a cure, as stated above, is not claimed or anticipated, the improvement in the patient's

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general condition has been very marked and the glandular enlargements have for the most part disappeared. It is probable, however, that there will be flare-ups from time to time and that further X-ray therapy will be indicated.

A SATISFACTORY TECHNIQUE FOR LOCAL ANESTHESIA IN CYSTOSCOPY.*

By LINWOOD D. KEYSER, M. D., Roanoke, Va.

Present methods of local anesthesia in cystoscopy are not altogether satisfactory. This is shown by the mental reaction of hypersensitive patients or of those with inflamed bladders or urethrae when a repetition of such treatment is suggested.

Alypin solution in five per cent strength, alypin tablets, benzyl alcohol, cocaine and novocaine are the agents usually employed. Aside from the alypin tablet which is deposited in the posterior urethra, these anesthetics are usually applied by a through and through urethral injection, and, as is often the case, much of the fluid escapes and fails to pass the external urethral sphincter in any considerable amount. Cocaine in one per cent or two per cent strength and novocaine in two per cent to four per cent strength have been most popular, but all too frequently, even in the hands of the most gentle urologist, we encounter cases where the process of cystoscopy and its accessory manipulations become a trying ordeal for the patient. Occasionally toxic symptoms of marked degree follow the use of cocaine and for this reason we are reluctant to use stronger solutions of the drug. During the past few years the epidural injection of novocaine through the sacral hiatus in strength of two per cent has been applied with excellent results, the nerves of the sacral plexus being blocked and a state of total anesthesia in the bladder, prostate, urethra, and sphincteric regions being produced. However, the time required for the induction of sacral anesthesia is usually one-half to three-quarters of an hour, the patients frequently complain severely of the after pain in the sacral region, and the method is not without some danger from the standpoint of systemic novocaine reaction.

During the past year the following technique has been developed in my hands and at the present time seems to fill the need for a purely local anesthetic to the urethro-vesical mucosa when the total desensitization of sacral anesthesia or of gas or ether is felt unnecessary.

The patient having been made to void is catheterized with a soft rubber catheter and the residual urine is determined, the bladder being completely emptied. One ounce of a ten per cent (10%) solution of novocaine (freshly prepared) is introduced into the bladder through the catheter. As the catheter is being withdrawn, a further amount of the same solution is injected along the posterior and anterior urethra. About one-fourth of one ounce of solution is required. A small pledget of cotton impregnated with ten per cent cocaine solution is placed in the fossa navicularis to anesthetize the meatal region. Thus the mucous membrane of the trigone, sphincter, and entire urethra are definitely immersed with a strong anesthetizing agent. Ten to fifteen minutes are allowed to elapse before the introduction of the cystoscope.

This procedure has been carried out during the past few months in some twenty-five cases as above outlined. The anesthesia in all but two cases was almost perfect, no pain or at most a slight feeling of discomfort being complained of during the manipulations. In regard to the two cases where anesthesia was not altogether satisfactory, one was a woman on whom cystoscopy was done by the Kelly method in the knee chest posture for urethral stricture. The patient complained of slight pain until the dilating wax bulb engaged the meatus and passed into the lower ureter, when considerable discomfort was produced. The second case was a man who had scarred posterior urethra with much induration as the result of an old periurethral abscess for which an external urethrotomy had been done about a year before. In this instance the passage of the rubber catheter had been impossible because of irregularity of the posterior urethra. As we did not wish to add further trauma at the time of cystoscopy by the passage of a stiff web catheter (which had been done previously for bladder irrigation), we decided to rely upon through and through injection of the solution via the anterior urethra. Probably little or none of the solution reached the trigone or sphincteric regions.

I mention the trigone and sphincteric regions because these are the points subject to most irritation during the cystoscopic procedure.

*Read before the meeting of the Southwestern Virginia Medical Society in Marion, September 11 and 12, 1924.

The sensory nerve supply of the bladder wall is chiefly from the sacral nerves, especially the second and third, together with some fibres from the hypogastric plexus. The hypogastric or pelvic plexus supplies the prostatic urethra, including the montine region, while the anterior urethra in addition gets some of its fibres from the pudic nerve and possibly from the nervus erigens. The nerve endings are particularly rich in the region of the trigone, the vesical sphincter, and the prostatic urethra. These are the points over which the end of the cystoscope is moved during observation of the urinary efflux and during catheterization of the ureters.

In using ten per cent novocaine solution, we deal with probably a maximum therapeutic concentration of the most efficient and probably at present the least toxic local anesthetic. The application of the solution directly to the empty bladder and posterior urethra by the method described bathes the trigone, ureteral meatuses, the sphincteric region, and the posterior urethra with strong anesthetic solution in a way that none of the usual methods do. Spasm of the ureteral meatuses which is one of the bugbears of the urologist in catheterizing the ureters of hypersensitive patients has been absent in the cases on which this report is based. Two tuberculous bladders and a number with marked cystitis as the result of old chronic pyelonephritis are to be especially mentioned. In these the anesthesia was efficient, only slight discomfort being complained of.

Local anesthesia by the method described probably persists from fifteen minutes to a half an hour, after the anesthetizing fluid is diluted by the introduction of the distending fluid used in connection with the cystoscopy. This is certainly more than ample time for any type of examination or treatment, with the possible exception of litholapaxy where sacral anesthesia is probably the method of choice.

It should be emphasized that no claim is made that the method outlined will be of any value in preventing post-cystoscopic reactions, such as ureteral colic, vesical tenesmus, transient acute hydronephrosis, etc. Neither the ureter nor the kidney is affected in any way. However, the method described seems to me to be ideal for routine cystoscopic observation and treatment and in my own hands has proved more satisfactory than any other type of local anesthesia used.

Correspondence

No Reduced Railroad Rates to Staunton.

Ridgeway, Va.,
September 15, 1924.

To the Editor:

After extended correspondence, reduced rates were granted us to the Norfolk meeting of the Medical Society of Virginia and one hundred and seventy-six paid cash fares. With the help of the General Passenger Agent of the Norfolk & Western, we were given another trial with reduced fares to the Roanoke meeting last October, with the understanding that if 250 tickets were not paid for, we would not ask the railroads for reduced rates this year to Staunton. Only seventy-six bought tickets after every effort to get doctors with passes to buy tickets for their wives and daughters, and each member was urged to use his certificate and get the reduced rates, so that the rules might be complied with, thus guaranteeing rates this time. It appeared to most physicians that this was not of sufficient importance to them to get their co-operation for the general good of the Society along this line, and now no reduced fares are available for the doctors most needing them—the poorer country physicians.

The Railroad Passenger Association requires 250 tickets to be paid for with cash (not surgery), to get the lower rates. What is to be done?

Unless reduced rates are given, the attendance will grow less yearly. The suggestion is made that, until the rules are changed by the railroads, we meet at the time the annual Fairs are held in the largest cities. Some will say accommodation will be lacking for both at the same time, but, by investigating the subject, you will find four cities with ample room for both. Besides, it gives the doctors outside recreation not to be gotten any other way.

The next method is for this committee to co-operate with others in the other states and show the railroad companies that it is only fair to count passes as so many cash fares, and get the rules changed. In this way we would have the lower rates to all future meetings.

Let every Society member without a pass come by automobile to Staunton and show the railroad companies their loss by not giving us fair treatment.

J. Beverly DeShazo,
Chairman Transportation Committee.

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Explanation of the "West Law" for the Physical Inspection of School Children.

Richmond, Va.,
September 11, 1924.

To the Editor:

Much misunderstanding has arisen in the minds of doctors and laymen in regard to the requirements of the West Law about physical inspection of school children.

The physical inspection required of teachers is not a medical examination. Any intelligent layman with a little instruction can make the required physical inspection, which simply determines whether there is an obvious departure from the normal, which might handicap a child in receiving his instruction in the school room. The inspection consists of determining whether the vision is normal, according to Snellen's Chart, and whether the hearing is normal as determined by conversational voice at twenty feet, and whether there are defective teeth, whether there is mouth breathing, whether a child is underweight, according to standard tables issued by the Bureau of Education, and whether there is any skin eruption. If there is any departure from the normal disclosed by this inspection, the child is instructed to visit the family doctor for "medical examination and treatment."

Teachers and nurses are instructed not to make a diagnosis or prescribe treatment.

Experience of the last two years has demonstrated the great value to the pupils of the physical inspections that have been made. Many hundreds of children have been found with physical defects, which handicap them in their work and which have been in many instances relieved by the prompt attention of their physicians. Last year 24,000 corrections of physical defects were reported as having been made by the family physicians and specialists as result of these inspections.

Physical inspection is made by nurses or teachers to report on the following:

Skin eruption	Posture
Vision	Height
Hearing	Weight
Mouth breathing	Underweight
Teeth	

Medical examination is made only by a doctor to determine functional or organic defects of the following:

Eyes	Nutrition
Ears	Glands
Nose and throat	Lungs
Mouth	Abdomen
Skin	Kidneys
Back	Blood
Feet	Nervous system

Criticisms of the work and suggestions for improvement will be appreciated.

Ennion G. Williams,
State Health Commissioner.

Summer Grippe.

New Market, Va.,
September 6, 1924.

To the Editor:

I am anxious to report some unusual and interesting cases now exhibiting themselves in my practice. During the latter part of June I was called to see a family of five people. Every patient in the family presented the following pathological picture:

"Severe headache; backache, general muscular aching, anorexia; profuse sweating; toxemia; coated tongue; pulse ranging from 80 to 130; temperature ranging from 99 3/5 to 103 3/5; chilly; nausea and frequent vomiting."

I particularly noted the absence of a distinct chill; pain in the chest; or severe abdominal pain. I was much surprised to find that in less than twenty-four hours there was complete recovery with the exception of a slight weakness. In every case I have failed to find any existing pathology in the lungs.

Perhaps ten days later I was called to see a man and his wife both exhibiting exactly the same picture. In forty-eight hours or a little less both completely recovered without the slightest bad effect.

Since the original cases during June I have had as many as seventy-five or eighty cases presenting exactly the same picture and recovery as complete as the original cases and as prompt.

Now, it is interesting to note that upon first examination there is certainly a strong resemblance to a beginning typhoid or one of the typhoid group infections. There is more marked similarity to influenza, in some of the cases. In view of the fact that there have been a number of cases of typhoid in the county, I was careful not to make any "snapshot" diagnosis of any case. Again, it is interesting to note the short course of the disease and prompt recovery. There is no question in my mind of an existing contagiousness or in-

fectiousness, as the case may be, as it seems to go through a family quickly.

I have been advised by another physician that he has had exactly the same thing. He stated that he did not know what it was but that he had been calling it "Summer Grippe." He further stated that at first he thought he was dealing with typhoid until the cases began to recover so promptly.

I was most anxious to get some blood cultures and secretion smears from the cases but recovery is so prompt that the patients object to being "stuck" with a needle. It is difficult to make a detailed study of this condition as the patients are not sick enough the next day to remain in bed. They return to their routine work, notifying the physician that they are all right.

I will be glad to have an expression relative to this condition and, too, as to whether any doctor has had similar cases in any other part of the State.

ALLEN H. MOORE, M. D.

The Truth About Medicine

In addition to the articles enumerated in our letter of July 26th, the following have been accepted:

Coleman and Bell Company
  Gentian Violet Improved Medicinal
Hynson, Westcott and Dunning
  Meroxyl
    Meroxyl Tablets—H. W. and D.
Jensen-Salsbery Laboratories
  Rabies Vaccine (Human) Phenol Killed
Eli Lilly and Company
  Oridine
    Oridine Tablets
H. A. Metz Laboratories
  Silver-Salvarsan, 0.6 Gm. Ampules
National Aniline and Chemical Company
  Gentian Violet Medicinal—"National"
Parke, Davis and Company
  Diphtheria Toxin Antitoxin Mixture, 0.1 L+.—P. D. and Co.
E. R. Squibb and Sons
  Antistreptococcic Serum—Squibb. Packages one 10 c.c. syringe
  Antistreptococcic Serum—Squibb. Packages one 50 c.c. vial
  Antistreptococcic Serum Rheumatic—Squibb. Packages one 20 c.c. vial
  Antistreptococcic Serum Rheumatic—Squibb. Packages one 50 c.c. vial
  Diphtheria Toxin Antitoxin Mixture (New Formula). Packages thirty 1 c.c. ampules
  Sulpharsphenamine—Squibb. 1 gm. ampules
  Sulpharsphenamine—Squibb. 3 gm. ampules.
Frederick Stearns and Company
  Insulin—Stearns Quadruple Strength
Wilson Laboratories
  Ampules Pituitary Solution—Wilson, 0.5 c.c.
Nonproprietary Articles
  Thiosinamine
  Gentian Violet Medicinal

NEW AND NON-OFFICIAL REMEDIES

Holocaine Ointment—M. E. S. Co.—Composed of holocaine (see New and Non-Official Remedies, 1924, p. 35), 1 per cent., water 1 per cent., wool fat and petrolatum 98 per cent. Put up in collapsible tubes for application to the eyes. Manhattan Eye Salve Co., Louisville, Ky. (Jour. A. M. A., Aug. 2, 1924, p. 357).

Silver-salvarsan, 0.6 Gm. Ampules.—Each ampule contains silver-salvarsan (see New and Non-Official Remedies, 1924, p. 54), 0.6 Gm. H. A. Metz Laboratories, New York.

Diphtheria Toxin-Antitoxin Mixture 0.1 L+.—A diphtheria toxin-antitoxin mixture (see New and Non-Official Remedies, 1924, p. 2993, each c.c. representing 0.1 L+ dose, of diphtheria toxin, neutralized with the required amount of antitoxin. It is marketed in packages of three bulbs, each containing 1 c.c.; also in vials containing 20 c.c. Parke, Davis and Co., Detroit. (Jour. A. M. A., Aug. 16, 1924, p. 508).

PROPAGANDA FOR REFORM

Camphor In Oil In Heart Failure.—Marvin and Soifer have studied the effects of camphor in oil as a cardiac stimulant. They failed to secure evidence of any action on heart rate, respiration, blood pressure, vital capacity or the general clinical condition in which digitalis is frequently promptly effective. Henceforth, the burden of proof that camphor in oil has a rational place in the treatment of congestive heart failure rests with its advocates. All others may well hesitate to place their trust in a drug that seems to have given more promises than therapeutic performances. (Jour. A. M. A., August 2, 1924, p. 362).

More Misbranded Nostrums.—The following products have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act: De Witt's Kidney and Bladder Pills (E. C. De Witt and Co.), consisting essentially of methylene blue, potassium nitrate and plant material, including a volatile oil, such as juniper oil. Foster's Backache Kidney Pills (Porto Rico Drug Co.), consisting of potassium nitrate, rosin, fenugreek, uva ursi and an essential oil such as juniper. Glycofostina (Henry S. Wampole Co., Baltimore), consisting essentially of strychnin sulphate, sodium, calcium and potassium glycerophosphate, alcohol and water. (Jour. A. M. A., Aug. 2, 1924, p. 375).

Rectal Administration of Digitalis.—Digitalis is absorbed rapidly and fairly uniformly from the alimentary tract of man, although some substances in the digitalis group, notably strophanthus products, are unsuited for oral administration. However, nausea, vomiting or surgical operations may sometimes interfere with the use of digitalis by mouth. For such emergencies digitalis may be satisfactorily administered by rectum. In many patients with auricular fibrillation, the results have been rapid and beneficial. Rectal digitalis therapy is not intended to supplant the well established oral method of ad-

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ministration, but rather to be used as an emergency measure when the customary mode of introduction is not feasible. (Jour. A. M. A., Aug. 9, 1924, p. 446).

The Therapeutic Use of Digitalis.—The Council on Pharmacy and Chemistry has long held that digitalis effects can be obtained satisfactorily in most instances by the oral administration of digitalis itself, the tincture or the infusion, and that the intravenous administration of digitalis preparations is rarely necessary. However, investigation indicates that digitalis preparations are administered intravenously far more frequently than seems to be demanded. Because of the importance of digitalis therapy, the Council decided to appoint a committee composed of men who have made a study of questions concerning the administration of digitalis, and to request this committee to prepare a report for publication which would set forth concisely the limitations of digitalis therapy and the methods of obtaining digitalis effects. At the request of the Council, Drs. G. Canby Robinson, Paul D. White, Cary Eggleston and Robert A. Hatcher prepared a report. This report brings out the indications for the use of digitalis, the limitations of the drug, its dosage and method of administration. It discusses at considerable length the conditions where the intravenous and intramuscular administration of digitalis may be called for and when the oral administration will be found satisfactory. The report concludes with the statement that the oral administration of digitalis in the form of the standardized powdered leaf, infusion or tincture, meets every requirement of digitalis therapy, with the exception of those relatively infrequent cases in which immediate relief is imperatively demanded, or when nausea or vomiting precludes the oral method, and outlines the intravenous, intramuscular or rectal administration of digitalis bodies when the threatening condition of the patient demands immediate relief. (Jour. A. M. A., August 16, 1924, p. 504).

More Misbranded Nostrums.—The following products have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act: Doane's Kidney Pills (Foster-Milburn Co.), consisting essentially of potassium nitrate, ground leaves of uva ursi, a trace of volatile oil, such as turpentine or juniper oil, a resin, starch, sugar and talc. (For years the advertising of "Doane's Kidney Pills" has long been an offense against the public health. Its advertising methods have been such as to frighten the public into the belief that pain or soreness in the lumbar region is indicative of kidney disease). Lafayette Headache Powders (Lafayette Co.), consisting essentially of acetanilid, caffein, sodium bicarbonate and aromatics, including cinnamon and ginger. Grogan Mineral Water (Grogan Wells and Boone Institute of Massage), containing large numbers of bacteria and gas-forming organisms, indicating that the water was polluted. (Jour. A. M. A., Aug. 23, 1924, p. 631).

Scarlet Fever Toxin.—Scarlet fever toxin has been furnished by the John McCormick Institute to some city and state health departments. Physicians inquiring for this material, should apply to their local health department. There is an increasing demand for standardized toxin that the Drs. Dick believe should be met; however, because the toxin must be standardized on human beings, the commercial companies are going to find it difficult to standardize accurately. (Jour. A. M. A., Aug. 30, 1924, p. 705).

Chlorin Inhalations In Respiratory Affections.—Numerous devices have been advanced for the inhalation of chlorin gas. Several municipal health departments have installed treatment chambers where such devices are undergoing extensive experimentation. It is impossible to say if the virtues of the method have been demonstrated, and it must be considered in an experimental stage. The indications are that chlorin inhalations will not produce bacterial sterilization of the mucous membrane, although they seem to reduce the number of bacteria found on the tissues. The duration of an adequate treatment, the concentration of gas to be used, the methods by which the gas is to be produced, and similar factors are still the subject of experimentation. (Jour. A. M. A., Aug. 30, 1924, p. 691).

Fatal Anaphylaxis From Hemostatic Preparations.—Recently a death was reported which was caused by the injection of a hemostatic preparation. It was discovered afterwards that the patient was a sufferer from asthma and that the attacks were elicited even by the mere approach of a horse. Because of the importance of determining the anaphylactic possibilities of the various blood coagulants, the Council on Pharmacy and Chemistry had specimens of the following preparations examined: Coagulen—Ciba, Fibrogen—Merrell, Hemagulen—Lilly, Kephalin—Armour, Hemostatic Serum Lapenta (Hemoplastin)—P. D. and Co., Thromboplastin—Lederle, Thromboplastin—Squibb, Thromboplastin Hypodermic—Squibb, Thromboplastin Solution—Armour, Precipitated Horse Serum (Coagulose)—P. D. and Co. It was found that all of the specimens contained animal protein (in most cases horse or beef protein was present). In most cases the labels and descriptive literature did not state the precise nature of the coagulant. Since blood coagulants are usually administered as an emergency measure, physicians may overlook the danger and introduce these foreign proteins into a hypersensitive person. The Council recommends that all hemoplastic preparations be labeled to show the composition of the product, the character of the protein present, and to contain information which will cause the physician to inquire into the patient's history to learn if hypersensitivity exists. (Jour. A. M. A., Aug. 30, 1924, p. 705).

Book Announcements

National Health Series. Edited by the NATIONAL HEALTH COUNCIL. Funk and Wagnalls Company. New York and London. 1924. 16mo., full flexible fabrikoid. Average number of words per volume 18,000. Price 30 cents each; complete set of 20 volumes $6.00.

The six volumes herewith announced complete this series of non-technical, low priced books on health matters which are suitable for the layman: Adolescence—Educational and Hygienic Problems; Exercises for Health; The Child in School—Care of Its Health; Health of the Worker—How to Safeguard It; Home Care of the Sick; Your Mind and You—Mental Health.

Organotherapy in General Practice. G. W. Carnrick Company, 417-421 Canal Street, New York City. 1924. Fabrikoid. 253 pages.

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Editorial

Toxin-Antitoxin for Diphtheria Prevention.

Dr. William H. Park, director of laboratories, New York City, says about toxin-antitoxin: "From our experience during the last ten years, we are justified in believing that the general use of toxin-antitoxin in children between six months and two years of age will practically eliminate diphtheria from our community. In all our experience in New York City, we have never had any accidents, and with the improved preparation we are now using the annoyance in little children is of the very slightest."

The experience of the eminent New York physician is probably duplicable generally. The reaction that follows the administration of toxin-antitoxin is usually very mild; severe reactions are glaring exceptions. The annoyance consequent upon the severe reactions, few as they are, certainly can not be set as a counterbalance to the great advantage of immunities obtained. It is known that the three inoculations will immunize approximately ninety per cent of those receiving the treatment, and that not more than four or six persons out of every hundred are incapable of immunization by a series of inoculations.

Dr. Park further states that the children who have received the inoculations in New York have been checked up and have been found to be immune after nine years. He ventures the suggestion that they may well be immune for life. Certainly Dr. Park is entitled to entertain an optimistic attitude toward diphtheria prevention since the diphtheria death rate has been cut in half since toxin-antitoxin inoculation has been administered.

This subject might well interest our Virginia physicians. The importance of antitoxin as a curative agency is not to be questioned; but prevention is more important than cure. In rural practice this is peculiarly true, since difficulties of transportation frequently serve to delay the doctor's visit and make the early administration of antitoxin impossible.

Health authorities alone cannot banish diphtheria. For this disease as for many others, prevention lies mainly in the hands of the family doctor; and it is to the family doctor that these thoughts are presented.

I. C. R.

Tryparsamide.

One should view with interest the reports on tryparsamide in the treatment of late syphilis. About a year ago we took occasion to call this drug to the attention of our readers. The investigations and observations then in process were favorable to the drug. It seemed that this new arsenic preparation offered a refinement of action not possessed by other arsenicals. It seemed to show a trend toward selective action for neurosyphilitic pathology. During the year rather extensive use has been made of tryparsamide in neurosyphilitic cases. Observations and results obtained have been rather fully reported in two papers published in the *Journal of the American Medical Association*, for September 20, 1924, pages 888-899, inclusive. Those interested in this subject should carefully read these papers and the discussion following. In Baltimore (Moore, Robinson and Lyman), 195 patients, 133 of whom were neurosyphilitic, have been treated during the past four years with tryparsamide. These workers report that the results in early syphilis were poor. The drug is not a strong spirocheticide. It fails in repeated large doses to heal lesions or to cause the disappearance of surface organisms, while in ten cases of primary and secondary syphilis a single subsequent injection of arsphenamine produced healing. The drug possesses distinct power of penetration, and so it was used by these workers in fifty-two patients with late syphilis—nine with cutaneous syphilides, six with gummatous lesions elsewhere than the skin, thirteen with cardiovascular syphilis, and nineteen with no demonstrable lesions but with persistently

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positive blood Wassermann reactions. The result in this group was found less favorable than that gotten by arsphenamine and mercury. The blood Wassermanns, also, were not affected by the drug. The drug has been abandoned in this group of cases.

In neurosyphilis the drug was tried in 133 cases. In this field of therapy it seems to be of value.

The clinical effects of tryparsamide therapy may best be evaluated by considering its action on seventy-eight neurosyphilitic patients, of whom twenty-nine had not been previously treated and forty-nine had received prior treatment without complete relief of symptoms. There were thirty-six cases of general paralysis treated by the drug. Twelve with advanced disease were improved or became worse. Five died. In this group remission of mental symptoms has occurred in nine, while fourteen have returned to useful occupations. Lightning pains and gastric crises were improved in three and completely relieved in six of eighteen patients with tabes. Some of these had failed to get relief after intensive treatment with arsphenamine. Eight of the tabetic patients were unimproved.

There were twenty-four patients with meningovascular syphilis. Twenty, showing such symptoms as headache, vertigo, convulsive and cranial nerve palsies, were improved or completely relieved; four were not helped.

These observers conclude that, in primary and secondary syphilis, or in tertiary syphilis without nervous system involvement, the therapeutic effect of tryparsamide is so slight as to preclude its further use in these types of infection; but in neurosyphilis they believe it is far superior to any other form of treatment. Tryparsamide is of special value, these authors state, in (1) early general paralysis, (2) in meningovascular neurosyphilis, and (3) in the majority of cases of tabes. In early neurosyphilis, owing to the feeble spirocheticidal value of tryparsamide, its use is of no value unless used in combination with arsphenamine.

Solomon and Viets, Boston, present results observed in the treatment of one hundred cases of neurosyphilis, covering eleven months. These cases were treated at the Boston Psychopathic Hospital and the Massachusetts General Hospital. Tryparsamide was given intravenously in three gram doses at weekly intervals. In these cases mercury and arsphenamine were also given occasionally. No serious reactions were observed except amblyopia, which remained permanent in three and transient in others. The clinical improvement in the group of cases varied with the type. Meningovascular cases showed the most pronounced improvement, and the improvement was more satisfactory than usually gotten in these cases with former methods of treatment. Tabes' cases failed to show as marked improvement as by other methods. In general paralysis, a relatively small number showed some improvement. These authors summarize by saying that general paralysis cases show no better results from tryparsamide than by older methods of intensive therapy by intrathecal, lumbar, cisternal and ventricular injections. These authors conclude by observing that tryparsamide "definitely affects cases of neurosyphilis, in some instances giving results better than can be obtained by our older methods alone, and in other cases not giving as good results." They believe, however, that tryparsamide is an important addition to our antineurosyphilitic drugs.

The Therapeutic Use of Digitalis.

One should appreciate the effort of a committee which endeavors to present in a brief paper the indications and limitations in the therapeutic use of digitalis. While there are many phases of the subject requiring elaboration, physicians who read the special article on the therapeutic use of digitalis as it appears, prepared by a committee, in the *J. A. M. A.*, August 16, 1924, page 504, have an important brief on this subject. One can hardly hope to have stated in a short paper more of the salient features of digitalis therapy than are here given. If physicians could only agree on such fundamentals, and if more of such fundamentals in therapy were oftener succinctly placed before practitioners in current literature, greater progress and success would be attained in therapy. For a brief reading and review of digitalis, our readers are urged to peruse this special article on digitalis.

Intravenous Injection of Mercurochrome and Gentian Violet in Treatment of Septicemia and Other Infections.

In the *J. A. M. A.*, March 1, 1924, Young and Hill give a report of observations made on the intravenous use of mercurochrome and gentian violet in septicemia and other infections.

The mercurochrome cases include two reports of septicemia, in which the results appear remarkable. There was a case of ascending retroperitoneal infection, two cases of pyonephritis, and two cases of colon urinary infections: in all of these cases, the effect was decidedly beneficial. Mercurochrome-220 soluble was used. Five cases of like nature were treated by gentian violet. The results were equally as brilliant. The staphylococcus septicemia appeared to yield with special promptness to intravenous injections of gentian violet.

Physicians interested in these drugs should read carefully the article referred to. Reservations should be made concerning the invariably good results until a larger number of cases receive this treatment.

News Notes

On To Staunton.

If you haven't given it serious consideration, plan now to join the army of doctors who will be going to Staunton for the meeting of the Medical Society of Virginia, October 14-17, under the presidency of Dr. W. W. Chaffin, of Pulaski. Programs sent out recently give an idea of the attractions which have been provided for the visitors. You really should not miss this opportunity to meet with your medical friends and visit this wonderful section of Virginia. Our invited guests this year are Dr. Albert J. Ochsner and Dr. Daniel A. Orth, of Chicago, and Dr. John Osborn Polak, of Brooklyn.

It was a source of regret that we were unable to secure reduced railroad rates for the Staunton meeting. So many members go on railroad passes or by automobile that it seems impossible to secure the desired number travelling by rail. A letter, on page 447, of this issue, explains the efforts of Dr. J. B. DeShazo, chairman of the Transportation Committee, and this office, in behalf of the project.

A few of the component societies are appointing their delegates to the Staunton meeting at meetings to be held early in October. The following are names of the delegates which have been reported to the Society's offices, before going to press with this issue:

ALEXANDRIA—*Delegate*, Dr. Llewellyn Powell; *alternate*, Dr. R. J. Yates.
ALLEGHANY-BATH—*Delegate*, Dr. B. H. Tatum; *alternate*, Dr. J. A. Riffe.
AMELIA—*Delegate*, Dr. P. T. Southall.
ARLINGTON—*Delegate*, Dr. P. W. Morehead; *alternate*, Dr. W. C. Welburn.
AUGUSTA—*Delegate*, Dr. T. M. Parkins; *alternate*, Dr. Kenneth Bradford.
BEDFORD—*Delegate*, Dr. E. L. Marshall; *alternate*, Dr. B. A. Rice.
BUCKINGHAM—*Delegate*, Dr. T. E. Patteson.
DANVILLE—*Delegate*, Dr. R. Bruce James; *alternate*, Dr. I. C. Harrison.
DINWIDDIE—*Delegate*, Dr. F. J. Wright; *alternate*, Dr. John Harwood.
FAIRFAX—*Delegate*, Dr. Wm. P. Caton; *alternate*, Dr. F. M. Brooks.
FLOYD—*Delegate*, Dr. J. M. Harman; *alternate*, Dr. S. T. Yeatts.
FREDERICK-CLARKE—*Delegate*, Dr. B. B. Dutton; *alternate*, Dr. H. I. Pifer.
FREDERICKSBURG—*Delegate*, Dr. G. B. Harrison; *alternate*, Dr. Lee Cooke.
LOUDOUN—*Delegate*, Dr. W. D. Sydnor; *alternate*, Dr. G. F. Simpson.
LOUISA—*Delegate*, Dr. H. S. Daniel; *alternate*, Dr. W. C. Mason.
LUNENBURG—*Delegate*, Dr. H. E. Whaley.
LYNCHBURG-CAMPBELL—*Delegate*, Dr. Geo. P. Hamner; *alternate*, Dr. J. R. Gorman.
NELSON—*Delegate*, Dr. E. C. Kidd; *alternate*, Dr. J. C. Everett.
NORFOLK—*Delegates*, Drs. J. D. Collins, Mary E. Roche, R. L. Payne, Chas W. Doughtie and George W. Schenck.
NORTHAMPTON—*Delegate*, Dr. G. W. Holland; *alternate*, Dr. Walker Jackson.
PATRICK-HENRY—*Delegate*, Dr. J. A. Shackelford; *alternate*, Dr. Geo. T. Divers.
PIEDMONT—*Delegates*, Drs. Lewis Holladay and Percy Harris; *alternate*, Dr. J. W. Scott.
PRINCE EDWARD—*Delegate*, Dr. C. B. Crute.
RICHMOND—*Delegates*, Drs. J. A. Hodges, Garnett Nelson, Fred M. Hodges, M. W. Peyser, J. K. Hall, T. D. Jones, James H. Smith and J. Morrison Hutcheson; *alternates*, Drs. Carrington Williams, Warren T. Vaughan, J. B. Stone, A. I. Dodson, J. F. Geisinger, R. E. Mitchell, W. B. Blanton and P. D. Lipscomb.
ROCKBRIDGE—*Delegate*, Dr. Reid White; *alternate*, Dr. F. M. Leech.
SOUTHAMPTON—*Delegate*, Dr. J. A. Grizzard; *alternate*, Dr. R. L. Raiford.
SOUTHSIDE—*Delegate*, Dr. Geo. H. Reese; *alternate*, Dr. J. Bolling Jones.
SOUTHWESTERN—*Delegates*, Drs. Z. V. Sherrill, W. H. Ribble and W. R. Cushing; *afternates*, Drs. Jas. K. Gray, Chas. F. Graham and E. H. Henderson.
SURRY—*Delegate*, Dr. W. W. Steward; *alternate*, Dr. J. H. Parker.
WARREN-RAPPAHANNOCK-PAGE—*Delegate*, Dr. W. J. Olds; *alternate*, Dr. J. G. Brown.
WARWICK—*Delegates*, Drs. L. E. Stubbs and W. S. Snead.

The Southwestern Virginia Medical Society

Held its regular meeting at Marion, September 11 and 12, Dr. S. S. Gale, of Roanoke, presiding. An interesting program was given and the following delegates were elected to the Staunton meeting of the Medical Society of Virginia: Drs. Z. V. Sherrill, Marion; W. H. Ribble, Wytheville, and W. R. Cushing, Dublin; alternates, Drs. James King Gray, Marion; C. F. Graham, Wytheville, and E H. Henderson, Marion.

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Doctors elected to membership are: Drs. D. B. Stuart, Dublin; R. H. Harrington, Elk Creek; D. S. Divers, Pulaski; M. A. Johnson, Jr., Ernest F. Flora, and F. A. Farmer, of Roanoke.

The next meeting will be held at Pulaski, Va., March 26 and 27, 1925.

Alleghany and Bath County Medical Society.

At a combined meeting of the Medical Societies of Alleghany and Bath Counties, it was agreed that the two societies would amalgamate and be known under the above caption. It was further arranged to have six meetings each year: two at Clifton Forge, two at Covington, and two at Hot Springs. So far as known, all regular practitioners in the two counties, who are in good standing, are members of the society. Meetings are regularly attended.

R. P. Hawkins, Jr.
Secretary.

Patrick-Henry Medical Society.

At the meeting of this Society held September the 5th, at the "Roundabout Club," near Martinsville, Va., papers were presented by Drs. G. B. Dudley, Jr., R. R. Lee, and George T. Divers, following which election of officers was held. Those chosen for the coming year are: President, Dr. G. T. Divers, Stuart; Vice-president, Dr. H. G. Hammond, Martinsville; secretary-treasurer, Dr. G. B. Dudley, Jr., Martinsville.

Dr. J. A. Shackelford was elected delegate and Dr. G. T. Divers alternate to the House of Delegates of the Medical Society of Virginia at its meeting in Staunton, in October.

G. B. Dudley, Jr., *Secretary.*

The Southside Virginia Medical Association

Held its last regular meeting in Richmond, September 16, at Johnston-Willis Hospital, Dr. George H. Reese, of Petersburg, presiding, Dr. R. L. Raiford was in his usual place as secretary. The attendance was good and the meeting a most successful one. Dr. George H. Reese, Petersburg, was elected delegate to the Staunton meeting of the Medical Society of Virginia and Dr. J. Bolling Jones, also of Petersburg, alternate. It was decided to hold the next meeting in December at Petersburg. Following the business session supper was served on the roof garden of the hospital.

The Buckingham County Medical Society

Met at Dillwyn, Va., September 26, 1924, the following physicians being present: Drs. John Randolph, Perkins Glover, P. E. Tucker, and T. E. Patterson. Dr. Randolph called the meeting to order and stated the purpose of the meeting. Dr. T. E. Patterson, Ransons, was elected delegate to the Staunton meeting of the Medical Society of Virginia, and the power was given him to name his alternate should he not be able to attend. Nothing further coming up for discussion, the meeting adjourned.

J. Randolph, *Secretary.*

Dr. C. A. Hutchinson,

Appalachia, Va., is a charter member of the Appalachia Lodge, Knights of Pythias, recently reinstated at that place.

Dr. Blanton L. Hillsman,

A well known surgeon of Richmond, Va., was appointed surgeon of the Police Department of the city, under its new administration, and entered upon his duties on the first of October.

Dr. C. J. Andrews,

Norfolk, Va., announces that after October the first his practice will be limited to obstetrics and gynecology.

Major Benj. B. Warriner,

Of the Medical Corps of the regular army, who has been connected with the War Department, Washington, D. C., for some time, has been transferred to Langley Field, Hampton, Va.

Dr. Benjamin E. Hunt,

Formerly of Jeffs, Va., who graduated this year from Medical College of Virginia, Richmond, has located at Jenkinjones, West Virginia, for the practice of his profession.

Dr. Foy Vann,

Norfolk, Va., an experienced fox hunter, has again been selected by the Virginia Fox Hunters' Association as one of the judges for the fourth annual trials of the Association to be run at Suffolk, November 18-21.

Kiwanians Open Children's Ward to Danville Hospital.

The Danville, Va., Kiwanis Club has equipped and opened a cottage adjacent to Hilltop Sanitarium, in that city, as a children's ward. It has accommodations for six children and includes a living room, dining room and large porch.

American Congress on Internal Medicine.

The committee in charge of the program for the 1925 convention of The American Congress on Internal Medicine, has requested each

hospital in Washington to take part in making up the program of clinics and demonstrations for the 5,000 visiting physicians who are expected in Washington at that time.

Garfield Hospital has already formulated a tentative program, embracing clinics on metabolic diseases, the latest work in the prevention and cure of scarlet fever, and recent progress in the treatment of angina pectoris.

St. Elizabeth Hospital is planning to accommodate 1,500 of the visitors with ten clinics each morning, devoted to all branches of internal medicine in addition to special mental and nervous conditions. There will also be exhibits of specimens and a series of brain preparations showing the evolution from the simplest to the most complex structure.

The program of the United States Naval Hospital will include electrocardiograms and basal metabolism room demonstrations, exhibits in medical zoology, exhibits in gross pathology, exhibits in serology and clinical chemistry, tropical diseases; demonstrations of chlorine treatment; demonstration of preventive medicine methods; exhibits in dental diagnoses, and dental clinic, and exhibit in aviation medicine.

The Washington medical men intend to put on a program which will demonstrate to the rest of the country that nowhere is medical work more progressive than in the nation's capital.

Dr. Musgrave Health Officer in Henrico County.

Dr. G. H. Musgrave has been appointed health officer of Henrico County, to succeed Dr. B. B. Bagby, resigned. Dr. Musgrave, formerly of Boykins, Va., has for the past year been health officer of Northampton County, Va., with headquarters at Cape Charles.

Dr. Bagby has recently become health officer of Richmond, under its new administration.

Dr. Herbert Lamont Pugh,

Crozet, Va., of the class of '23, University of Virginia Medical School, sailed about the middle of September from Norfolk, via the Panama Canal, for Bremerton, Wash., where he will go aboard the U. S. S. California, flagship of the Pacific battle fleet, for duty. The California is slated for a nine months' cruise, to include Honolulu, the Philippines and Australian and New Zealand waters. Dr. Pugh has recently completed a year's service at the U. S. Naval Hospital, Boston.

New Medical Laboratories at the University of Virginia.

The Departments of Histology and Embryology, under Dr. Harvey E. Jordan, and of Pathology and Bacteriology, under Dr. Harry T. Marshall, have long since outgrown the inadequate provision for their work possible in the old Medical Building, in which they have been housed since 1906.

The completion of the splendid memorial gymnasium at the University has released the Fayerwether Gymnasium building for other purposes, and this building has been turned over to the Department of Fine Arts, under Professor Hudnut. Ultimately, this department will doubtless need the entire building, but at present it requires only the main floor, leaving the basement unoccupied. This basement has, therefore, been temporarily allotted to the Laboratory of Pathology and Bacteriology and is now being fitted up for this purpose.

At the same time, the rooms in the second floor of Cabell Hall, vacated by Professor Hudnut, have been assigned to the Laboratory of Histology and Embryology, and this laboratory was ready to begin work at the opening of the session.

Many readers of this article, familiar with the basement of Fayerwether Hall, will be interested in knowing how it is to be used for the entirely different purpose of a pathological laboratory. The windows are to be furnished with prismatic glass so as to reflect light from the sky into the building. The entire interior will be painted white. The main student laboratory will be on the west side of the basement, formerly occupied by the Cage. An instructor's room is also provided at the north end of the Cage next to the old swimming pool. The offices, record rooms, private laboratories of the staff, a research laboratory, and a store room are placed on the east side of the basement.

The student entrance will be by a new door out at the southeast window under the steps. This will lead into an entrance corridor. The student locker rooms and lavatory will be at the south end of the basement under the steps, and north of this the old locker room will be converted into a pathological museum, which will be located next to the lecture and demonstration tables. The autoclaves, sterilizers, dish washing tables, etc., will be placed

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in the center of the basement formerly occupied by the showers and baths. Incubators will also be placed conveniently along the walls of this space.

The final disposition of the old pool room is not entirely settled, but it will probably be used, in part at least, for an animal room.

Although the department even now could profitably use more space than the new arrangement provides, nevertheless the new quarters are far more convenient in that all rooms are on the same floor.

The old Medical Building, which is being vacated, is of historical interest. It was planned by Jefferson for the Medical Department, though it was built a year or so after his death. As originally planned, it consisted of three lecture rooms with three adjoining professors' offices. This was at first the only provision for the Medical School of the University, the dissecting hall being built a few years later. The medical course at that time was purely didactic, so that three lecture rooms and three professors' offices met its every need. In the course of time the inevitable expansion came, and not only a dissecting hall, but other laboratories were provided, and finally the great University of Virginia Hospital was inaugurated shortly before the close of the nineteenth century. Meanwhile, the old Medical Building had housed not only its part of the medical instruction, but was also for many years, until the erection of Cabell Hall, the home of the Biological Department, under Professor Tuttle. Since 1906, it has inadequately housed the work in Pathology and Histology.

Surgeon H. McG. Robertson,

U. S. P. H. S., who for the past two years has been on duty in Richmond with the State Board of Health, has been transferred to the U. S. Marine Hospital, in Boston. In Virginia, Dr. Robertson was in charge of the Co-operative Rural Sanitation, which was carried on in a number of counties.

Red Cross Instruction in Home Hygiene and Care of the Sick.

In order that simple theories of household sanitation and practical, easily-acquired methods of nursing procedure may be accessible to women and girls, the American Red Cross conducts an extensive system of class instruction in Home Hygiene and Care of the Sick, which, since 1914, has been given to over three hundred thousand women and girls.

The aim of the Red Cross course in Home Hygiene and Care of the Sick is twofold. The first lies in the remedial field and consists in trying to teach the elementary principles of nursing, personal hygiene and household sanitation to all types of women and girls so that, in time of national emergency when a shortage of professional nursing service may exist and also in time of minor illness in the home, the women and girls of the family may be able to care for the sick in their homes. The second aim of the course lies in the preventive field of health education and consists in teaching women and girls to assist in checking infant and child mortality by the intelligent care of babies and children and to further adult health and efficiency by the prevention of avoidable diseases and the control of communicable ones. The classes are conducted by authorized Red Cross nurse instructors who give demonstrations interwoven with theory. The students then practice what the nurse has shown them. This instruction covers a period of not less than twenty-four hours and ends in practical and written tests.

Through these courses the American Red Cross is rendering a highly practical and worthwhile contribution to the betterment of individual and community health, a contribution which should earn for this great humanitarian organization the interest and support of physicians during the Red Cross Roll Call, to be held between Armistice Day and Thanksgiving, November 11-27.

Dr. S. Palmer Hileman,

Rockbridge Baths, Va., of the class of '23, Medical College of Virginia, has accepted a position as a member of the staff of Catawba Sanatorium, Va., and entered upon his duties there on October 1st. He recently completed a year's service at the Retreat for the Sick, Richmond.

Dr. W. Brownley Foster,

For several years health officer of Roanoke, Va., entered upon his new duties as director of public welfare of Richmond on October 1st.

New Superintendent of Nurses.

Miss Josephine McLeod has been appointed superintendent of nurses at University of Virginia Hospital, and entered upon her duties October 1st. She succeeds Miss Margaret Cowling, resigned. Miss McLeod is a native

Virginian and a graduate of the training school at Johns Hopkins University. Her last appointment was at Michael Reese Hospital, in Chicago.

Southern Medical Association.

The annual meeting of the Southern Medical Association, in which our readers are always so much interested, is to be in New Orleans, November 24-27, under the presidency of Dr. Charles L. Minor, of Asheville, N. C. Mr. C. P. Loranz, secretary-manager, Empire Building, Birmingham, Ala., will gladly give any information requested about this meeting.

Report of Congress on Medical Education, Medical Licensure, Public Health and Hospitals.

The council on Medical Education and Hospitals of the American Medical Association, Chicago, has just issued the Proceedings of the Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals, held in Chicago, last March. Copies of this book may be had at the nominal charge of fifty cents each.

Drs. Snarr and Hawthorne Move to Winchester.

Drs. George G. Snarr and Allen T. Hawthorne, formerly of Harrisonburg, Va., have opened offices in Winchester, Va., where their practice will be limited exclusively to the diseases and surgery of the eye, ear, nose and throat.

Dr. M. L. Dalton,

Who practiced at Floyd, Va., for a number of years and operated the Ridgemont Hospital at that place, has moved to Roanoke, Va., for the practice of his profession and has offices at 314 MacBain Building.

Dr. John Albert Key,

Baltimore, Md., has gone to St. Louis, where he will be in charge of research work at the Shriners' Hospital for Crippled Children.

"It is Cheaper to Prevent Accidents than to Pay for Them."

Under the above heading the National Committee for the Prevention of Blindness states that a survey recently made shows an estimated loss of 158,000,000 days as the result of non-fatal accidents occurring in industry in one year. Financially, alone, this means a big loss to employers. It is conservatively estimated that eye accidents constitute ten per cent of all non-fatal industrial accidents. On this estimate, no employer or industrial manager will question the assertion that it is cheaper to prevent eye accidents than to pay for them.

Dr. Charles Young Bidgood,

A member of the class of '20, University of Virginia, Medical School, has located in Richmond, with offices at Medical Arts Building. He will limit his work to urology. Dr. Bidgood has had wide experience in this branch, having come to this city direct from Baltimore, where he had been for two years connected with Brady Urological Institute, Johns Hopkins University, the last year as resident urologist.

Automobile Tourists, Beware!

It is announced that no less than eighty-five per cent of the waters in streams and lakes of the United States is unfit to drink. In view of this fact, some health authorities have already entered upon campaigns to safeguard public health and have sent out scientists to test and label water sources. Travelers should, therefore, carry water with them or drink only from the springs or wells about which they can obtain definite information.

Orthopedic Clinic at Bedford.

About the middle of September an orthopedic clinic was held at Bedford, Va., under the auspices of the local Red Cross chapter, at which time a number of patients were examined by Dr. Thomas Wheeldon, of Richmond, and Dr. Bernard Kyle, of Lynchburg.

Dates for A. M. A. Meeting.

The Board of Trustees of the American Medical Association have set May 25-29, as the dates for the next annual meeting, at Atlantic City, N. J.

Dr. Keister Leaves Virginia.

Dr. William S. Keister recently resigned as joint health officer of Charlottesville and Albemarle County, Va., to accept a position in health work in Decatur, Ill.

Dr. George B. Young, of the U. S. Public Health Service, at one time stationed at Norfolk, Va., was appointed to take Dr. Keister's place, and entered upon his duties on September 1st.

A Hospital-Hotel.

Hudson Towers is a hospital-hotel which is being constructed in New York City as an open institution where all ethical doctors can care for their patients. It is stated that only about 1,000 of the 7,000 physicians of New York City have hospital affiliation. This hospital will be of service to the ethical doctors in the remaining six thousand and will also provide

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accommodations for such relatives of patients as the attending physicians may approve.

Dr. P. G. Hamlin,

Who has been connected with the medical staff of the Eastern State Hospital, Williamsburg, Va., has gone to Mitchell Field, Long Island, where he will be connected with the medical department of the aviation corps.

Dr. V. L. McCullers

Has moved from Locust Dale, Va., to Remington, Va., where he will make his home and practice.

Dr. Coleman B. Ransome,

For the past several years health officer of Newport News, Va., has resigned and accepted the same position in Roanoke, succeeding Dr. W. Brownley Foster, resigned.

Married.

Dr. William Wallace McChesney, Abingdon, Va., and Miss Frances Jenkins, Murfreesboro, N. C., September 2.

Captain Harry Wall, of the medical corps, U. S. A., and Mrs. Anna Mae Ehlen Ross, Towson, Md., September 8. Dr. Wall was formerly of Winchester, Va., and was connected with the staff of St. Vincent's Hospital, Norfolk, before being commissioned an officer in the medical corps of the army. He is stationed at Marie, Texas.

Dr. Douglas Dickinson Martin, Tampa, Fla., and Miss Mary Louisa Chancellor, St. Petersburg, Fla., the latter part of September. Dr. Martin was formerly of Gordonsville, Va., and is an alumnus of the former University College of Medicine, Richmond.

The Hospital for Joint Diseases,

New York, announces the opening and completion of their new hospital on Madison Ave., between 123rd and 124th Streets. The building was dedicated at a meeting held on Sunday afternoon, October 5th, and opened for inspection on the 5th and 6th of October.

Provisional Birth and Mortality Figures.

According to the Department of Commerce, provisional figures for the first three months of 1924 show lower birth and death rates than for the corresponding period in 1923.

Dr. E. R. Ferguson,

Formerly of Inman, Va., is now located at Harrisonburg, Va., for the practice of his profession.

Dr. Jury B. Loving,

Of the class of '22, Medical College of Virginia, and formerly of Culpeper, Va., is now located at and practicing in New Goshen, Indiana.

Dr. Walter Joseph Otis,

An alumnus of the Medical College of Virginia and at one time chief house officer of Memorial Hospital, Richmond, has been promoted to the rank of lieutenant colonel in the Medical Officers' Reserve Corps, and has been assigned to the 14th Hospital Centre as consultant in neuro-psychiatry to that Centre. In addition to other duties, he is attending specialist in neuro-psychiatry to the Veterans Bureau, District Six, located at New Orleans.

Dr. Otis has just moved his offices to the Chaille Building, 2000 Tulane Avenue, New Orleans, La., and will limit his practice to neuro-psychiatry.

Dr. William Meyer,

Formerly of Odd, Va., has moved to Herndon, Va., where he is engaged in practice.

Dr. Charles V. Carrington,

Richmond, has been named surgeon of the Fire Department of this city, under the new administration, and entered upon his duties the first of October.

Late Vacationists.

Dr. Wesley Williams, Norfolk, has returned from his vacation, having spent several days in and around Gettysburg, Pa.

Dr. G. Paul LaRoque, Richmond, returned home about the middle of September, after an extended visit to the Mayo Clinic in Rochester, Minn. He returned by way of Chicago and Cleveland, visiting Dr. Crile's clinic in the latter city.

Dr. D. A. Ownbey, Newport News, enjoyed a motor trip through North Carolina in September.

Dr. and Mrs. John R. Atwell, Wicomico Church, are spending a vacation in Florida.

Dr. and Mrs. R. L. Williams have returned to their home in Norfolk, after spending the summer at various resorts in Texas.

Dr. and Mrs. Julian F. Ward, Winchester, have been on a visit to New York.

Dr. and Mrs. Hunter McGuire, Richmond, have been on a motor trip through the Valley of Virginia.

Dr. and Mrs. H. W. Porter returned to their home in Louisa, Va. about the middle of September, after a motor trip through the Northern Neck of Virginia.

Dr. and Mrs. R. C. Fravel, Richmond, re-

cently visited Mrs. Fravel's father, Dr. C. E. C. Peyton, in Pulaski, Va.

Dr. and Mrs. Henry A. Bullock and son, Richmond, returned in September from a visit to friends in Evanston, Ill.

Dr. and Mrs. T. H. Massey, Smithfield, in September took a motor trip to Washington, D. C., and other points of interest.

Dr. and Mrs. W. T. Smith, Norfolk, recently visited Dr. Smith's brother at Saluda, Va.

Dr. Lewis Holladay, Orange, attended the Virginia Synod of the Southern Presbyterian Church, in Richmond, in September.

Dr. and Mrs. Cullen Pitt returned to their home in Richmond, recently, after a visit to friends at Atlantic City, N. J.

Dr. and Mrs. E. W. Young, Petersburg, have been on a visit to Atlantic City.

Dr. and Mrs. Calvin Childress and family, of Norfolk, recently visited Dr. Childress' family in Richmond.

Dr. and Mrs. H. G. Stoneham, Waverly, while on their vacation, visited Dr. Stoneham's parents near Irvington, Va.

Dr. and Mrs. Paul Redd and daughter, Richmond, paid a visit to Irvington, Va., in September.

Dr. and Mrs. Hunter H. McGuire have returned to their home in Winchester, Va., after a motor trip to Canada.

Dr. Everett S. Barr,

Recently connected with Highland Hospital, Asheville, N. C., has returned to Philadelphia, where he will again join the medical staff of the Philadelphia Hospital for Mental Diseases, Byberry, Philadelphia. Dr. Barr is well known in this State, having graduated from Medical College of Virginia. He is a member of the Medical Society of Virginia.

Dr. George W. Black,

Of this year's class, Medical College of Virginia, has located at Pineville, N. C., for the practice of his profession.

Dr. Benjamin L. Hume,

Huntington, W. Va., an alumnus of the Medical College of Virginia, has been appointed coroner for Cabell County, West Virginia.

The American Public Health Association

Will hold its fifty-third annual meeting in Detroit, Mich., October 20-23, with headquarters in Hotel Statler. There are nine sections in the Association—Public Health Administration, Laboratory, Sanitary Engineering, Vital Statistics, Industrial Hygiene, Child Hygiene, Food and Drugs, Health Education and Publicity, and Public Health Nursing—and each section has its program. The Public Health Administration Section has secured Dr. Dick, originator of the Dick Test for Scarlet Fever, to discuss his work. Many other interesting subjects are to be discussed. Detailed information about this meeting may be secured from headquarters of the Association, 370 Seventh Avenue, New York.

The National Social Hygiene Conference for 1924

Will take place in Cincinnati, Ohio, November 19-22, headquarters being the Hotel Gibson. This conference will mark the tenth anniversary of the founding of the American Social Hygiene Association, and it will be held under the joint auspices of the national association and the Cincinnati Social Hygiene Society.

The railway companies are arranging for special rates and the local committee has planned a number of luncheons and other entertainment features. Full information and a copy of the Conference program may be obtained from Mr. E. F. Van Buskirk, Executive Secretary, Cincinnati Social Hygiene Society, 25 East 9th Street, Cincinnati, Ohio, by members of the American Social Hygiene Association and all others desiring them.

Dr. William F. Greene,

For a number of years a prominent physician of Mt. Vernon, N. Y., has retired from active practice and is making his home with his siter, Mrs. George F. Norton, at Winchester, Va.

New Out-Patient Department for Medical College of Virginia.

The building formerly known as Virginia Hospital, adjoining the college, has been renovated and two floors have been remodeled for an out-patient department of the Medical College of Virginia.

Two Pulaski Doctors Sick.

Dr. W. W. Chaffin, president of the Medical Society of Virginia, and Dr. G. G. Painter, Pulaski, Va., have both been quite sick. Dr. Painter has been out for a couple of weeks and Dr. Chaffin is reported as much improved.

Prevent Diphtheria.

At this season, when diphtheria is most prevalent, the State Board of Health is stressing the administration of toxin-antitoxin as a means of prevention. All doctors, of course,

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give antitoxin when once diphtheria has developed, but too much emphasis cannot be laid on the need for early immunization, as immunity is rarely obtained within two months after administration, and it frequently requires as much as six months to secure absolute immunity.

Dr. and Mrs. Louis C. Brand,

Of Staunton, Va., sailed on September 29, for Korea, where they will engage in medical missionary work. Dr. Brand graduated from University of Virginia Medical School in 1923 and served for a year as interne at University Hospital.

Don't Shirk Your Responsibility as an American Citizen.

Whatever your ticket, show your patriotism and do your duty by voting for president on Tuesday, November the 4th. Do you realize that for every 100 who voted 96 failed to take advantage of their rights as American citizens and vote in the last presidential election? Rally round your flag at the polls on November the 4th.

The Radiological Review

Made its initial appearance this month. It is to be published bi-monthly, at Quincy, Ill., under the editorship of Dr. Harold Swanberg. This journal is to devote itself to the progress of X-ray and radium as it relates to the practicing physican and dentist. It has a large field and we wish it success.

The Annual Report of the Bureau of Vital Statistics for 1921-1922,

Replete with tables, is interesting and shows a large amount of work accomplished by the Bureau. There is a slight decrease noted in the number of births and marriages and a slight increase in the number of deaths. There was also a reduction in the number of divorces reported. Enforcement of the law for prevention of blindness in the new born by the use of a one per cent solution of silver nitrate in the eyes immediately after birth is already bearing fruit, there being noted a decrease in the number of cases of ophthalmia neonatorum.

Any doctor interested in this report may obtain a copy upon request sent to the State Board of Health, Richmond, Va.

The Association of Surgeons of the Norfolk and Western Railway

Held their annual meeting in Norfolk, Va., early this month, and, in addition to the scientific sessions, enjoyed an oyster roast at Cape Henry and visits to places of interest in that section. Dr. Jos. M. Burke, Petersburg, Va., was elected president; Dr. J. M. Manning, Durham, N. C., and Dr. Wade H. St. Clair, Bluefield, W. Va., vice-presidents; Dr. T. D. Armistead, Roanoke, Va., secretary-treasurer; and Dr. W. B. Stevens, Eckman, W. Va., and Dr. Thomas Hulick, Cincinnati, O., members of the executive committee.

Guinea Pigs For Sale.

Prices reasonable. Apply Health Officer, Newport News, Va. (Adv.)

Wanted

Interne for small hospital. Write qualifications, experience and salary first letter. Address: Box 359, Martinsville, Va. (Adv.)

Assistant Superintendent Wanted

In a hospital of sixty-five beds doing general hospital work. Write at once to Dr. J. E. Harris, Winchester, Va. (Adv.)

Obituary

Dr. Joseph Thomas Davis,

Of North Emporia, Va., died July 7th, of cirrhosis of the liver. He was forty-four years of age and graduated from the University College of Medicine, Richmond, in 1903. He was a member of the Medical Society of Virginia.

Dr. Luther Carroll Corbin,

A native of Nansemond County, Va., but who had for the past twenty years made his home at Passaic, N. J., died September 14th, at the home of a sister in Lynchburg, where he had been for about a month. He was sixty-three years of age and had graduated from Baltimore Medical College in 1894.

Dr. B. F. Fulks,

Lambsburg, Va., died of tuberculosis, May 30th, at the age of fifty-five years. He was a graduate of the Medical College of Virginia in the class of 1896.